

SECOND REAL TIME EVALUATION OF FAO's WORK ON HIGHLY PATHOGENIC AVIAN INFLUENZA

COUNTRY REPORT: NIGERIA

12-16 OCTOBER 2009

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I. INTRODUCTION

Prof. Brian Perry, Dr Humphrey Mbugua and Mr Robert Moore visited Nigeria from 12 to 16 October as part of the Second Real Time Evaluation of FAO's Work on Highly Pathogenic Avian Influenza. In line with the evaluation's terms of reference, the focus of the visit was to determine the relevance, efficiency, effectiveness, sustainability and likely impact of country level assistance provided by FAO through regional and national interventions in the past few years. The ECTAD Country team attached to the FAO Representation prepared a programme of meetings (see annex 1) and made logistical arrangements for the mission.

Nigeria was the first African country to report H5N1 in early 2006. The First Real Time Evaluation (RTE) noted that "*the FAO response was noticeably stronger (than that of Egypt)*" but "*the implementation of projects to carry out active surveillance has been delayed by the bureaucratic processes within FAO as well as the institutional difficulties in Nigeria*". Some of the documented constraints were "*the lack of a direct line of command within the veterinary services*" and the need "*to strengthen the capacity of the [FAO] national office (e.g. by establishing a country level ECTAD team) and to ensure that management systems are in place to facilitate response activities.*"

The Second RTE team has followed-up on the findings of the first RTE and made an attempt to summarize the role of FAO in the preparedness and control of avian influenza in the

following sections. Clearly the outbreak of HPAI in Nigeria as the apparent index country in Africa was of considerable concern globally, given the perceived weaknesses of institutions to respond, the vulnerability of many African societies with their high levels of poverty, and the concern that avian influenza would add yet another disease burden to the human population. Almost four years later, while that concern has not disappeared, the disease has at least for the moment been brought under control, and the efforts made to achieve this have had very positive impacts in Nigeria both on raising awareness of the roles of livestock in processes of sustainable growth, and on the value of effective veterinary services.

II. HPAI STATUS AND EVOLUTION

Nigeria is a poor country, ranked 160th (out of 177) in GDP *per capita*¹. About 60% of the population lives below the poverty line², with most of the Nigerians residing in rural areas and being engaged in agricultural practices. In spite of its declining contribution to the nation's foreign exchange earnings, the agricultural sector continues to play a very important role in the socio-economic development of the country, constituting some 35% of the GDP³.

Traditional livestock production in Nigeria is varied and complex, consisting of farming and marketing of cattle, sheep, goats, poultry and pigs. The estimated poultry population is approximately 140 - 160 million and is estimated to contribute some 10% of agricultural GDP⁴. Taking local production as an indicator of consumption, poultry makes a significant contribution to household food security, being a major source of protein and emergency cash. Based on estimates from the National Bureau of Statistics (NBS) in Nigeria, since 2000, the poultry sub-sector in Nigeria grew at 5.9 percent per year, reaching a population of 150 million in 2005 until the appearance of HPAI in 2006⁵. Since then, a significant reduction in the poultry trading activities (imports and exports) has been observed in (Uzochukwu Obi et al. 2008⁶).

There are considered to be four main groupings of poultry producers, corresponding roughly to the FAO poultry classification of sectors 1–4. Backyard indigenous growers focus on indigenous breeds (chicken, duck, guinea fowl, pigeon, and local turkey) for their own consumption, gifts, and some sales. Their birds roam and scavenge freely, exposed to migratory wild birds that could carry the HPAI virus. Because these producers take few biosecurity measures, their birds are in constant danger of contracting HPAI. Backyard commercial producers derive most of their livelihoods from poultry-related activities but also generate income from other sources. Although they take more hygiene and biosecurity measures than the indigenous growers, their birds also are susceptible to HPAI infection and face an additional risk of contracting the virus through toll-milled feed. Medium-to-large-scale commercial producers are better organized in terms of on-farm hygiene and biosecurity, but may have unfenced premises, free access for unauthorized personnel, allowing

¹ UNDP, Human Development Index, 2005

² Socio-Economic Impact of Avian Influenza in Nigeria, UNDP, 2006

³ Adene D.F. and Oguntade A.E., The structure and importance of the commercial and village based poultry industry in Nigeria, October 2006

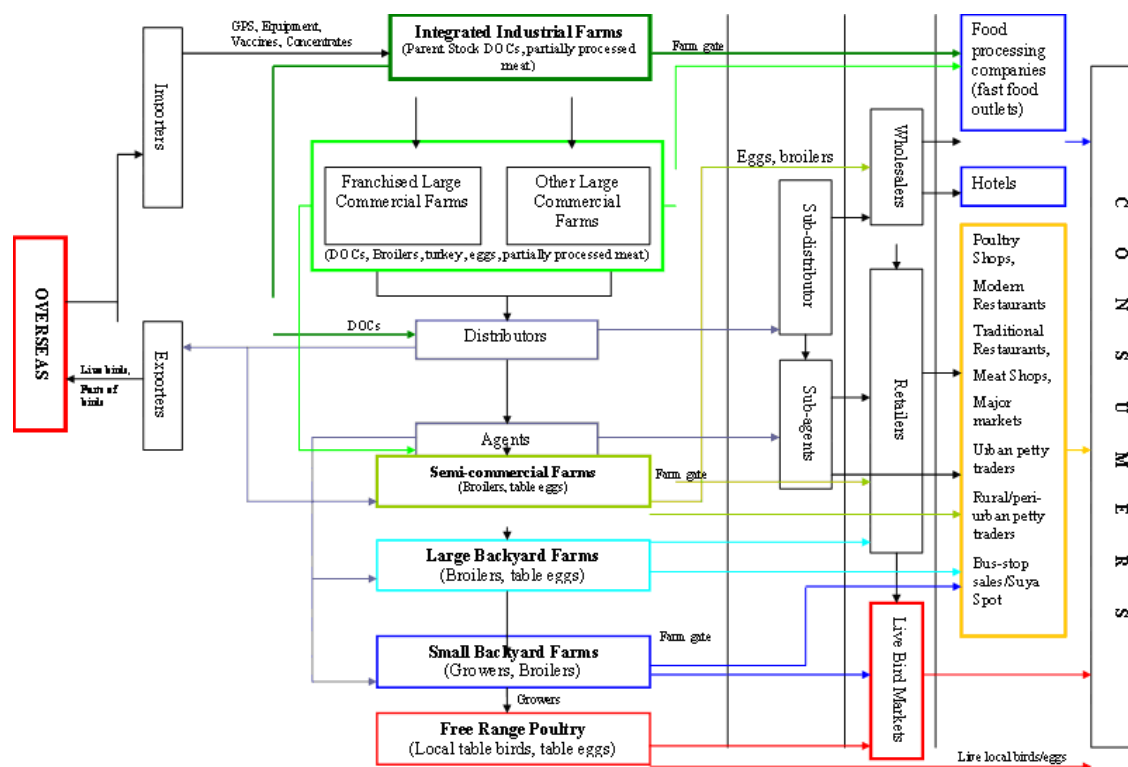
⁴ FDLPCS, 2006. HPAI in Nigeria: Strategies for Prevention of Introduction, Disease Surveillance Networking and Contingency plan for a disease emergency, pp 10.

⁵ Nigeria, National Bureau of Statistics (NBS). 2006. Economic performance review April/July 2006. Federal Republic of Nigeria, Abuja, Nigeria

⁶ Uzochukwu-Obi, T., A. Olubukola, and G. A. Maina. 2008. *Pro-poor HPAI risk reduction strategies in Nigeria —Background Paper*, Africa/Indonesia Team Working Paper No. 5, IFPRI. <<http://www.hpai-research.net/index.html>.

indiscriminate access to poultry pens. The experiences of some of their colleagues whose farms were decimated in the 2006–07 HPAI outbreaks forced them to pay closer attention to biosecurity. Industrial farms have the highest levels of biosecurity; their risk of spreading HPAI is minimal because integration is vertical rather than horizontal. The diagram below shows the complexity of poultry trade flows in Nigeria (see reference in footnote 5).

Figure 1. Poultry Trade Flows in Nigeria



Intensively managed commercial and semi-commercial poultry farms - mostly located in urban and peri-urban areas - constitute about 25% and 15% of the poultry population respectively⁷.

Nigeria was the first country in Africa affected by the H5N1 virus, with HPAI outbreaks first reported in the Kaduna State and confirmed by the Minister of Agriculture and Rural Development on February 8th, 2006. The disease then spread rapidly to 97 Local Government Areas in a total of 25 States and the Federal Capital Territory⁸, with some 440,000 birds culled in the first two months⁹.

Nigeria suffered waves of HPAI outbreaks that peaked twice in February 2006 and February 2007. The outbreaks affected 3057 farms/farmers causing 1.3 million of the country's 160 million birds to be destroyed at the cost of US\$ 5.4 m paid in compensation by the government of Nigeria (FLD, 2008).

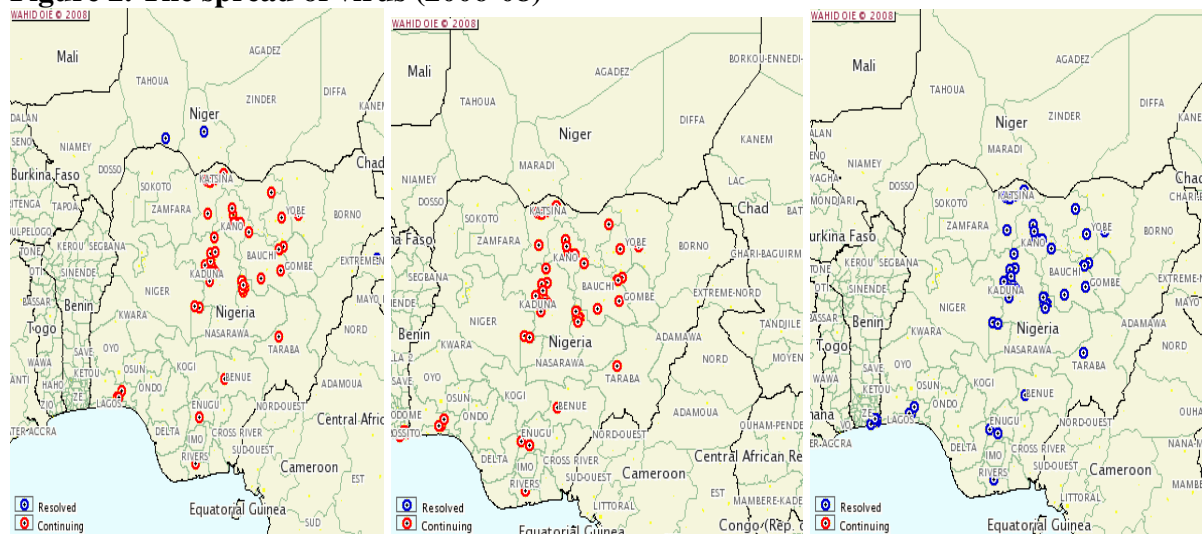
⁷ FAO (2008) Poultry Sector Country Review

⁸ AICP Project website, 2008

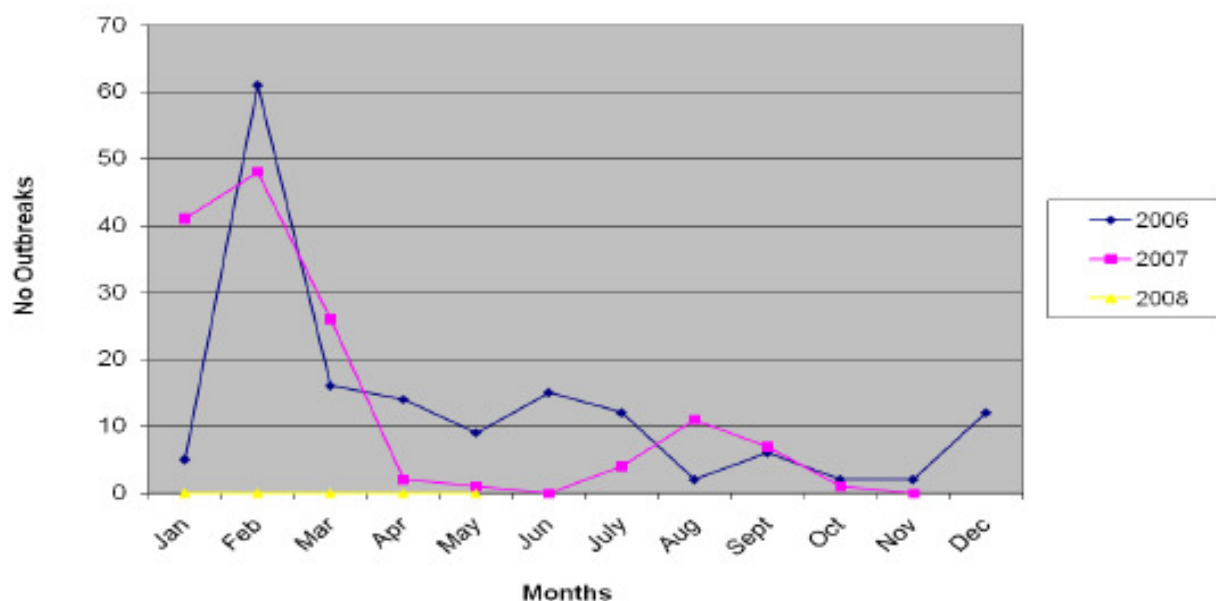
⁹ A. Riviere-Cinnamond, Compensation Strategy Nigeria, April 2006

The last outbreak of the first wave of disease was recorded in the Anambra State in October 2007. The disease was again reported in July 2008 in Kano and Katsina States, and was quickly brought under control.

Figure 2. The spread of virus (2006-08)



Source: World Animal Health Information Database (WAHID), OIE (2008)



The figure above shows the monthly incidence of HPAI in 2006, 2007 and 2008.

One documented human case of disease infection occurred in January 2007, associated with a live bird market in Lagos. Although the situation is now under control, a recent study by the AICP¹⁰ documented that the “live bird markets as presently operated are too far from being bio-secure and that the operators are not really mindful of the compelling need for their bio-safety and those of their customer clients”.

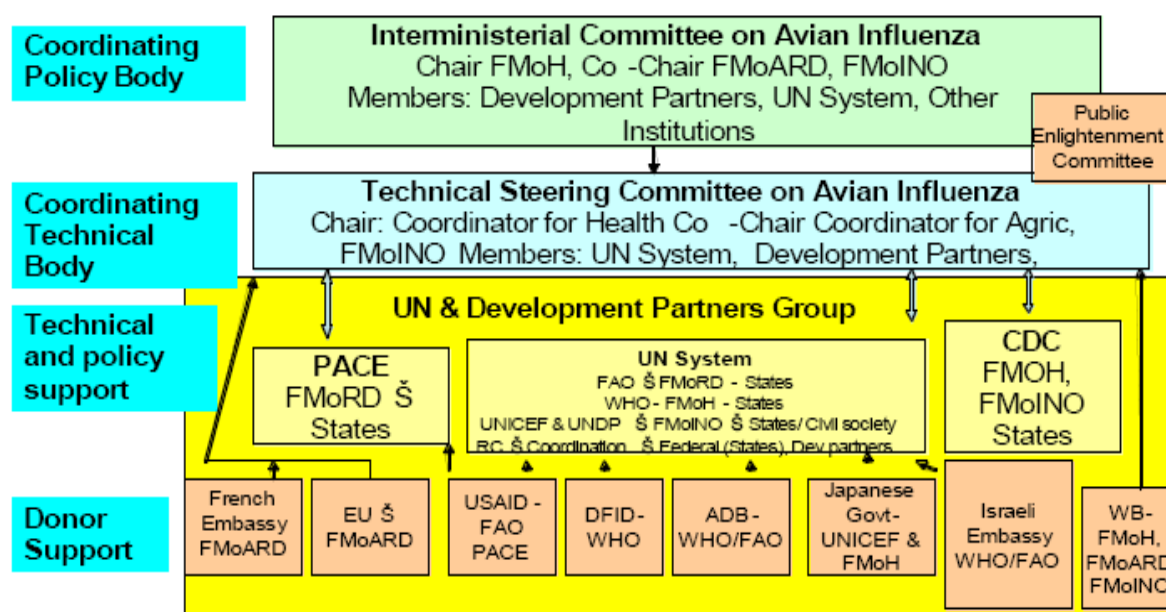
¹⁰ Avian Influenza Control and Human Pandemic Preparedness and Response Project, The development of live bird markets in Nigeria, March 2008

III. NATIONAL HPAI RESPONSE FRAMEWORK

National institutions and agencies responsible for the overall regulation and monitoring of human and animal health, information and waste management standards in Nigeria include: i) the Federal Ministry of Health; ii) the Federal Ministry of Agriculture and Rural Development; iii) the Federal Ministry of Environment and Urban Development; iv) the Federal Ministry of Information.

In this context, direct responsibility to trace and monitor the movements of livestock through registrations, licenses and permits lies within the Federal Department of Livestock and Pest Control Services (FDLPCS hereinafter, inside the Ministry of Agriculture and Rural Development). The effective prevention, detection and control of animal epidemics are the responsibilities of the National Veterinary Services (NVS) and the Nigerian Veterinary Quarantine Services (NVQS).

With the outbreak of HPAI in February 2006, an Inter-ministerial Committee on HPAI - comprising the Federal Ministries of Agriculture, Health, Information and National Orientation, together with representatives of the international and donor community (WHO, FAO, EU, DfID and USAID) - was set up to ensure proper coordination of information and activities on the prevention, management and eradication of the disease in the country. The Inter-Ministerial Committee was also charged of the supervision of a newly created AI Crisis Management Centre. The budget of NVS was also increased in 2007 as a “result of the provision for HPAI activities”.¹¹ The structure of the avian influenza response bodies are illustrated in the figure below (source Obi et al., 2009¹²).



The control of the diseases of all animals in Nigeria is still regulated by the Animal Disease Control Act (No. 10/88), which sets the rule for the import/export of animal products, surveillance and notification of diseases, compensation policies, etc. According to a WB

¹¹ Report Exercise on Highly Pathogenic Avian Influenza: FAO contribution to the UNSIC report (2008)

¹² Uzochukwu-Obi, T., A. Olubukola, and G. A. Maina. 2008. *Pro-poor HPAI risk reduction strategies in Nigeria —Background Paper*, Africa/Indonesia Team Working Paper No. 5, IFPRI. <<http://www.hpai-research.net/index.html>>

financed study, most of the core areas covered by the Act have now lapsed, including the number (250) of poultry and hatcheries to be registered, the size of penalty set in case of contraventions, and the list (context and specificity) of poultry diseases.¹³

Emergency plan and policies

When the global alert on the HPAI virus erupted in 2004, the Government asked a team of subject specialists of the University of Ibadan to draft a preliminary proposal for action as part of the pre-epidemic activities. Soon after, in 2005, two inter-ministerial Committees (on Health and Agricultural issues) worked on a National Emergency Preparedness and Contingency Plan, where operational, logistical and material requirements needed for a potential HPAI outbreak were considered.

When the first outbreak was confirmed in February 2006, the Government proclaimed a slaughter and eradication policy (without vaccination) for the stamping-out of the epidemic. At the same time, an “Integrated National Avian and Pandemic Influenza Response Plan” for the biennium 2007-09 was issued. The plan addressed avian influenza prevention and control, pandemic influenza containment, mitigation and recovery, as well as the wider non-health consequences of a human influenza pandemic. The overall approach aimed to ensure proper coordination at federal and state level, with all stakeholders working together. In particular, the plan proposed an Incident Command and Control System (ICCS) to ensure a unified management of the many multi-sectoral actors involved in the response to HPAI by strengthening the AI Crisis Management Centre at state level.

Key elements of Nigeria’s response package

World Bank funding

Following the first outbreaks of HPAI in Nigeria in early 2006, the Government requested assistance from the World Bank. A US \$50 million project, entitled the *Nigeria Avian Influenza Control and Pandemic Preparedness and Human Response Project (AICP)* was activated as an emergency operation under the GPAI initiative in June 2006. The project addresses both the animal and human sides of avian influenza and has four components: Animal Health, Human Health, Communication & Public Awareness, and Project Management. The project was restructured in April 2008 and extended to July 2011. The AICP Animal Health Component has 4 sub-components: (i) strengthening laboratory services, (ii) expanding national disease surveillance, (iii) strengthening biosecurity in the poultry market chain, and, (iv) workshops and strategic studies.

A programme of compensation

Compensation is seen by many as an effective mechanism to encourage disease reporting, when properly managed. Nigeria has run a very well thought out and well managed programme of compensation for poultry culled under Government control programmes. The Federal Ministry of Agriculture and Water Resources has paid approximately US\$ 5.43 million to farmers whose birds were culled due to avian influenza. The money was paid to more than 3,037 beneficiaries; more than 1.26 million birds were depopulated over the period 2006 - present. FAO played a role in providing consulting services to Nigeria in the

¹³ Avian Influenza Control and Human Pandemic Preparedness and Response Project, National Baseline Survey, December 2007

development of the compensation package¹⁴, which was seen to be transparent, fast and effective. In 2008/09 ECTAD Nigeria sponsored a study by Amogu¹⁵. The results of the study concluded that the package provided by the GoN was appropriate and well implemented. During the outbreak phase, the rates of compensation were revised based on a process of stakeholder consultation.

For a farmer to be eligible for compensation, s/he has to report any disease to the nearest veterinary authority, who will subsequently take immediate steps to manage the outbreak and take samples and inventory of the birds on the farm. This is followed by appropriate documentation by the authorities in the presence of other witnesses, which includes representatives of the Federal, State, LGA, traditional authority and the state security agents. The farmer is only compensated for birds that are culled by the authorities, not for all dead birds.

Table 1: Initial and Revised Rates of Compensation Per Bird in Naira (N) To Owners of Poultry

Species	Initial compensation	*Range of Revised Compensation
Chickens (commercial)	250	350 to 1,500
Eggs (commercial)		15
Chickens (free-ranging, rural)	250	100 to 750
Guinea fowl	250	100 to 500
Pigeons (fully grown)	250	250
Ducks and geese	1,000	100 to 700
Turkeys (local)	2,500	300 to 1,600
Emus		10,000
Ostriches	20,000	15,000 to 100,000
Ostrich eggs		4,000

*Rates dependent on rate of growth status of the bird.

Source: AICP, 2007.

The consideration of vaccination

Nigeria made an active decision not to use vaccination in its inventory of measures to control HPAI, and maintains that this is one of the reasons for the success it appears to have had in bringing the disease under control. The former CVO was concerned about the capacity to undertake and maintain a programme of vaccination in the country, in particular in the indigenous poultry sector, the capacity to achieve adequate levels of population immunity, the cost of vaccination, and the need for a clear exit strategy.

Vaccines were imported into Nigeria from China as a donation, and eventually expired. Avian flu vaccination is presently forbidden, in line with FAO recommendations that non-infected countries or countries without repeated outbreaks, should not vaccinate. There are unofficial reports of illegal vaccination among the commercial producers, and many in the commercial poultry industry have requested the Veterinary Services to allow vaccination.

¹⁴ A. Riviere-Cinnamond, Compensation Strategy Nigeria, April 2006

¹⁵ Amogu, 2009. FAO Consultancy on the Review of Compensation Policy for the Control of HPAI in Nigeria

Laboratory support

At present, the only laboratory statutorily charged with livestock disease diagnosis is the NVRI, Vom. With the emergence of HPAI, efforts were intensified to upgrade the capacity and capability of the institute for H5N1 diagnosis. Laboratory equipment and reagents were provided and specialized training in diagnostic techniques were carried out principally with the support of the FAO and other support agencies, and the World Bank credit facilities. Some delays occurred in equipping the laboratory (it reputedly took one year and three months for the safety cabinet to arrive).

The laboratory has improved storage capacity of samples (seen by the evaluation team), with enhanced molecular diagnostic capacity, a PCR platform and associated reagents. Notably, the turnaround time for diagnosis has improved from over 48 hours down to 12 hours, or even less. The transport of samples to the laboratory depends on the State concerned, but innovative partnerships with organisations such as the Road Transport Workers Association have reportedly helped. There is an epidemiology unit at Vom, but it is still in the early stages of capacity development.

In 2008 when the ECTAD unit conducted surveillance in the north eastern State of Gombe, some nine months after the last HPAI report in Nigeria, a H5N1 virus belonging to sub-lineage III was isolated from healthy domestic ducks. This virus had only previously been detected in domestic and wild birds in certain parts of the Middle East, Europe and Asia. The origin of the virus, and the reason this was the only isolation, remain a mystery,

The NVRI is now designated by the FAO coordinated Laboratory Network (RESOLAB) as a regional laboratory for the diagnosis of HPAI and other TADs for West and Central Africa. The Government is making efforts to upgrade the diagnostic capacity of five Veterinary Teaching Hospitals in Zaria, Ibadan, Nsukka, Maiduguri and Sokoto Universities for certain diagnostic tools for HPAI.

Epidemiology and the legacy of the PACE programme

Nigeria had developed a system of surveillance under the PACE programme which it used as a base for the development of HPAI surveillance. This included a centrally-based epidemiology unit, and an information system, originally developed under the ARIS system of the AU-IBAR. With a dialogue established with the FAO's TADinfo system, Nigeria embarked on the development of its own information system, designated the National Animal Disease Information System (NADIS).

IV. DONOR AND TECHNICAL ASSISTANCE SUPPORT

Since the outbreak of HPAI, the international community has supported the Nigerian Government with both technical and material resources - such as Standard Operating Procedures, Personal Protective Equipments, laboratory tools – as well as capacity building activities and financial resources.

As seen in the table below, beside FAO a number of other donors and multilateral agencies have assisted FDLPCS in its efforts to control and prevent any future outbreak of HPAI.

Figure 3: Types of Assistance to the Government of Nigeria

Donor/Dev. Partners	Technical	Material	Financial	Capacity Building
ADB			xxx	
AU-IBAR	xxx			
CDC	xxx			
China		xxx		
DfID		xxx		
EU		xxx	xxx	Xxx
Israel		xxx		
FAO	xxx	xxx		Xxx
France	xxx			Xxx
OIE	xxx			
Republic of Korea		xxx		
UNDP			xxx	
UNICEF	xxx			
USAID		xxx	xxx	Xxx
USDA-APHIS	xxx	xxx		Xxx
World Bank			xxx	

Source: FAO and the Federal Government of Nigeria, The National Medium Term Priority Plan for Highly Pathogenic Avian Influenza Control in Nigeria (2008-2010), page 11

In this context, FAO, AU-IBAR and OIE (through the Regional Animal Health Centre in Bamako), the EU, and the World Bank emerged as significant providers of both technical and financial assistance. The key projects are outlined below:

- The national “Avian Influenza Control and Human Pandemic Preparedness and Response” project (2006-09) from the World Bank was funded at US\$ 50 million. The project development objective was to sustain and promote poultry production, increase the income of producers through the surveillance and containment of HPAI.
- The EU (and AfDB) financed the Pan African Program for the Control of Epizootics (PACE, 1998-2007), which is managed by the AU-IBAR. The PACE project in Nigeria, as in 31 other African countries, was aimed at establishing a sustainable epidemio-surveillance network to eradicate Rinderpest and other animal diseases as well as promote the strengthening of veterinary services. A National Animal Disease Information & Surveillance network (NADIS) was put in place, with 170 surveillance points initially established and manned by trained surveillance agents who had to identify specific diseases, collect samples and take first sanitary measures (this number has been increased to 295, with plans to expand to 600). Through two EC-funded projects in the biennium 2006-2007, FAO contributed to this network by providing technical and capacity development assistance. In addition, the PACE programme conducted workshops and training activities targeted at national veterinarians and livestock farmers.

In reality, apart from the major funding by the World Bank, there has been only limited substantive financial support from other funding agencies. Encouragingly, in discussions with the World Bank in Abuja, it was understood that there is some interest in new funding for

Government under the One World One Health umbrella, bringing together the Ministries of Health, Agriculture and Communications in an Integrated Animal and Human Health Platform, intended to move on from the fire-fighting phase and building on the new confidence and capacity in livestock services emerging from the HPAI funding.

V. ROLE AND ACTIVITIES OF FAO

Since the first outbreak of HPAI, FAO has supported Nigeria in many ways. This support has involved both strategic inputs in the form of policy advice and studies and the undertaking of some pilots in the field. FAO was said to have played a particular strong role in setting up and managing national surveillance studies with EC and USAID funding, the results of which helped form a base for subsequent live bird market intervention programmes. The report of the First RTE list some of the activities conducted up to 2007. In general, however, the initial response was characterised by short-term consultancies mainly from FAO headquarters since there was no national ECTAD unit established.

In the past two years, activities have become much more focused and aligned to the National Medium Term Priority Framework for Animal Health (NMPTF-AI), which was signed by FAO and the Government of Nigeria in March 2008. FAO recent and ongoing activities fall under the agreed priority areas of surveillance, biosecurity, communication and wildlife research. A national ECTAD unit is also operational and led by an experienced CTA.

The bulk of FAO support has come through three activities, two of which are completed (with EC and USAID funding) and one presently on-going (with funding from SFERA Sweden, Canada and UNDP). In addition, various missions have been financed from other global HPAI-related projects, funded by Canada, France, Switzerland, UK and USA.

Table 2. Avian Influenza Projects implemented in Nigeria as of October 2009

Project	EOD	NTE	Donor	Total Approved Project Budget	Total Expenditures under the project	Budget Allocated for <u>Nigeria through FBA</u>	Expenditures and Commitments <u>under FBA for Nigeria</u>
OSRO/NIR/602/EC	01/08/2006	31/12/2007	EC	USD 953,274	USD 931,568	USD 611,453	USD 619,865
OSRO/NIR/601/MUL BABY01	06/11/2006	31/01/2009	USA	USD 1,635,520	USD 1,573,054	USD 747,735	USD 679,413
OSRO/NIR/601/MUL BABY02	06/11/2006	31/01/2009	UNDP	USD 90,000	USD 84,935	USD 77,187	USD 69,345
OSRO/GLO/504/MUL BABY01	01/12/2005	30/04/2007	Norway	USD 3,506,326	USD 3,352,712	USD 293,000	USD 182,955
OSRO/GLO/604/UK child	29/03/ 2007	31/03/2010	UK	USD 5,388,655	USD 4,439,887	USD 53,640	USD 47,129
OSRO/INT/604/USA BABY02	17/01/2007	29/09/2009	USA	USD 1,000,000	USD 687,670	USD 4,000	USD 4,000
OSRO/RAF/722/SWE	28/11/ 2007	31/12/2009	Sweden	USD 6,738,646	USD 4,657,185	USD 688,108	USD 458,557
NIR/08/002/01/12	03/04/ 2009	02/04/2010	UNDP	USD 311,000	USD 24,997	0	0
OSRO/GLO/702/CAN child	14/03/ 2007	13/04/2010	Canada	USD 7,827,361	USD 5,197,944	USD 82,026	USD 31,842
<u>Total</u>				<u>USD 27,450,782</u>	<u>USD 20,949,952</u>	<u>USD 2,557,149</u>	<u>USD 2,093,106</u>

Initial Activities in Nigeria

When HPAI first received attention as a global issue, Nigeria was an observer country in TCP/RAF/3016 “Emergency assistance for early detection and prevention of avian influenza in Eastern and Southern Africa”. After the virus was first discovered in the country, FAO assisted the Government with technical advice and some equipment, through the global projects. In April 2006, FAO assisted in fine-tuning the existing compensation strategy and (along with OIE and AU-IBAR) developed an information kit on HPAI that was eventually disseminated to all African countries.

Major Activities: Active Avian Influenza Surveillance Study in Nigeria (OSRO/NIR/602/EC) and Technical Assistance to the Government of Nigeria for Control and Eradication of HPAI (OSRO/NIR/601/MUL)

The EC project had a budget equivalent to USD 953,274 and operated from August 2006-December 2007. The MUL project had a total budget of USD 1,725,250, of which USD 1,000,000 was provided at the outset from USAID. It operated from November 2006, after a considerable delay in start-up, and was closed in January 2009. The projects, which were run largely in an integrated manner, built on the PACE (Pan-African Control of Epizootics) project in Nigeria. PACE had established a National Animal Disease Information and Surveillance Network, with 170 surveillance points initially established and staffed by trained agents, to identify specific diseases, collect samples and undertake initial sanitary measures if needed.

The new projects aimed at obtaining reliable data on the status of HPAI in the country. Most of the surveillance work focused on live bird markets (LBM) as these were thought to be a prime source for spread of HPAI. Some 26 States were selected that had a previous HPAI outbreak. In each State, four markets were chosen for study with three interventions each at two-week intervals. In each market, 29 trachea and cloacal swabs, and blood samples as well as 4 purchased live birds were taken per intervention, on a voluntary basis. H5 N1 was isolated in five markets during the study, but traceback of the origin of the infected birds proved to be impossible, due to absence of records in the markets relating to the origin of the birds.

The project also did similar studies in 11 States where the virus had not been previously reported, using the same methodology. Virus isolates were found in two States as a result of this study.

Besides these activities, the projects carried out considerable capacity development work, including training of staff at various levels and provision of equipment and supplies, particularly for the National Veterinary Research Institute in Vom.

Other Completed Activities

With USAID funding, FAO sent a three-person team to support assessment and communication activities subsequent to the confirmed death of a young woman from HPAI in January 2007. With the national committee and WHO, investigations were carried out to establish the source of the case and human risk exposure factors in markets. FAO carried out a study at Dagona Waterfowl Sanctuary in NE Nigeria (near Lake Chad) on resident (non-

migratory) birds, to assess potential risk for disease spread. It also conducted a seminar on advanced laboratory diagnostics for senior researchers at Vom.

The ECTAD country team and a HQ mission assisted the Government in 2008 in the formulation of a three-year National Medium-Term Priority Plan for HPAI Control. The main focus areas of the Plan are: strengthened passive surveillance system; epidemiological risk analysis to identify critical control points; improved understanding of poultry production, poultry movements and improved quarantine services; better understanding of the role of wild birds as potential carriers or reservoirs of HPAI; assess socio-economic impact of control and risk analysis; improved communication strategies. The team could not get information about the follow-up to this process.

The Operations side of the Nigeria ECTAD team was until recently run by periodic short term consultancies from Rome. A full time operations person based in Nigeria has now been appointed.

On-going biosecurity and communications activities

Much of the work of the ECTAD country unit, supported by the HQ ECTAD Communications and by the Biosecurity Unit, is focused on two projects. The biosecurity activity, which has a budget of about USD 750,000, is funded by Sweden, Canada and UNDP, with USD 500,000 from Sweden that must be disbursed by December 2009. The project is a pilot activity, which using participatory methods will develop practices and messages to improve biosecurity that are technically sound, but built on indigenous solutions. Similar projects are being implemented in Indonesia and Egypt. In Nigeria, the project works in three States (Ondo, Katsina, Anambra), with three Local Government Authorities (LGA) in each State and in three communities within each LGA. Selection criteria were applied to Zonal selection.

The activity is at an early stage in Nigeria, but reported to be more advanced there than in the other two countries. Inception workshops were held in September at State and local level, and also in Abuja. State-level training was being carried out just before and after the mission's visit. The activity is due to end in June 2010.

Because the activity has just started and two-thirds of the funding must be disbursed by the end of 2009, there is a rush to get as much in place as possible in a short period of time. UNDP and CIDA funds will be used to carry the activities in 2010.

FAO is also engaged in a project, supported by Canada, working with ten media specialists to document the human face of HPAI. Proposals from applicants were screened by an Advisory Committee. The project is assisted by a national communications specialist, who is also working on the biosecurity project.

Regional Activities

There have been a number of FAO regional/inter-regional initiatives, summarized below.

- TCP/RAF/3016 – Emergency Assistance for Early detection and Prevention of Avian Influenza in Western Africa.

- OSRO/GLO/706/FRA – Appui au système d’alerte précoce mondial et aux initiatives des réseaux régionaux pour la prévention et le contrôle de l’Influenza aviaire en Afrique centrale et de l’ouest.
- OSRO/RAF/612/USA Baby 03 – Support FAO’s Global Avian Influenza and Eradication programme for regional activities in West Africa.
- OSRO/RAF/717/USA – HPAI Early Warning Early Response and Preparedness Strategy Support in Western and Central Africa.
- OSRO/INT/604/USA Baby 02 – Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment.

In view of the relatively large programme in Nigeria and the small size of the regional interventions, they have not been very relevant in the Nigeria context.

VI. SYNTHESIS AND DISCUSSIONS OF FAO’s CONTRIBUTIONS AND ROLES

The evaluation team has reviewed the contributions and roles of FAO and has summarized their assessment to the extent possible following the headings presented in the TORs of the evaluation, and the RTE Inception Report.

Relevance and Appropriateness of FAO’s Strategy and Programme at country level:

With the major funding of HPAI intervention activities coming from a World Bank credit to the Government of Nigeria, the veterinary department has chosen to lead from the front. The FAO country level Strategy and Programme is understood to be focussed on certain very specific subject areas where the Government considers that FAO can play a strategic role. This means that there are only certain components of the National Programme to which the FAO contributes, and these are, or have been:

- a) a national cross-sectional prevalence study,
- b) an active surveillance project in live bird markets,
- c) a project on biosecurity and biosecurity communication,
- d) a media fellowship programme, and
- e) capacity building in all of the above, and in diagnostics and broader laboratory response mechanisms.

These areas are all deemed to be relevant and appropriate. The evaluation team noted that such a focused approach was largely a result of the agreed NMTPF-HPAI. In the particular context of Nigeria, a NMTPF for avian influenza activities was indeed found to be a valuable planning tool. Looking into the future, of particular importance for the FAO would be to further articulate the interface between its contributions to avian influenza preparedness and response, and to broader long-term capacity development contributions by FAO to disease surveillance and response to a wider range of livestock health priorities to the West African region.

Overall, FAO’s interventions have been highly appropriate in the context of the provision of strategic technical support to national interventions. As indicated earlier, the HPAI preparedness and response in Nigeria was very much led by Government, who had built on the infrastructures and capacity building in surveillance put in place by the PACE programme. With the outbreak of HPAI in Asia, the Nigerian Government initiated the development of a

preparedness plan, bringing in strategic support from FAO headquarters to help with the development of SOPs. The evaluation team was impressed by both the resolve, but also the leadership and management of the department in handling the crisis. FAO was then asked to assist with specific studies within the agreed NMTPF-HPAI, such as the national infection prevalence study, and this was the first step in a series of constructive, demand led and strategic interventions by FAO which helped secure the credibility of the Nigerian response.

Efficiency

FAO's initial responses have generally been timely, although follow-up assistance particularly through projects has been affected by delays from both sides. Compared to other affected countries, FAO has played a much smaller and more strategic role in Nigeria, with a relatively small budget. However, as mentioned above, the evaluation team expressed particular concern over the biosecurity activity, which has a budget of about USD 750,000, is funded by Sweden, Canada and UNDP, with USD 500,000 from Sweden that had to be disbursed by December 2009.

This project is a pilot activity, which using participatory methods will develop practices and messages to improve biosecurity that are technically sound, but built on indigenous solutions. The activity, which was first conceived in late 2008, is due to end in June 2010. Because the activity has just started and two-thirds of the funding must be disbursed by the end of 2009, there is a rush to get as much in place as possible in a short period of time. A request for an extension of this project until June 2010 has been submitted to Sweden. UNDP and CIDA funds will be used to carry the activities in 2010.

The evaluation team is concerned that the time available for this project is insufficient to monitor the process and, based on the results, draw lessons for further replication or modification of existing strategies and processes. This is very much an experimental project, the outcomes of which cannot be predicted but only hoped. The evaluation feels that, unless there is continued monitoring of the pilot experience over a period of at least two years, the impact of the project on behavioural change, if any, is likely never to be known. Behavioural change does not happen overnight and it would be necessary in any case to see if it is sustained. The evaluation sees an extremely high risk that this will be a failed experiment as it will never be possible to draw lessons from it.

On the operational and administrative side, support was from 2007 until recently provided by a short-term consultancy from Rome. There is now a full time operations person in Abuja. Operationally the Nigeria ECTAD is not linked to the Regional ECTAD in Bamako (nor in reporting responsibilities). This has affected the timeliness of certain activities; there are still 3 inception workshops at the State level to be carried out, and with the short amount of time left before funds must be spent, there is inadequate time to build on experiences gained in each workshop.

There has been excellent support from the FAO Representation, particularly in recent times. The FAOR coincidentally has a veterinary background, and as a previous Minister of Agriculture in an African country, understands well the machinery of government, which when combined with his strong interpersonal communications with senior Government officers, has been most effective in promoting an effective partnership with FAO.

Effectiveness of individual country programmes

FAO has played an important, and recognised, role at country level. Technical advice for revising the national preparedness plan was found particularly useful. The national cross sectional study, supported by FAO, while it gave largely predictable results, it was a necessary process which is seen as an important milestone in establishing Nigeria's response credibility. Furthermore the active surveillance project has played an important role in emphasising the significance of live bird markets in disease spread.

These improvements were led by Nigeria, with support from FAO and several other players. The area of FAO's contributions that have the greatest impact on broader surveillance of other transboundary disease has been in laboratory strengthening, particularly at the National Veterinary Research Institute, Vom (where equipment has also been provided by Japan and other donors), and in the training of laboratory staff and desk officers in different States. Nigeria has been exemplary in sharing information on the viruses isolated in the country, following confirmatory analyses carried out in Italy.

There is a small but relatively strong epidemiology group in Abuja. Surprisingly, however, there is little refinement and use of epidemiological data to provide a greater understanding of risk of infection, and the use of such analysis to feed into risk-based surveillance and risk-based strategic response mechanisms, given the limited resources available. There is still no official statement on the source of introduction of HPAI into Nigeria. Part of the dissection of risk is the understanding of market value chains. The FAO has provided some strategic input into value chain understanding in Nigeria¹⁶, but little use appears to have been made of this very broad level consultancy study in building up a risk framework. Other agencies, in collaboration with Government, have also made extensive inroads into Nigerian poultry value chain understanding, notably the IFPRI/ILRI DFID funded set of projects, in particular recent work by Akinwumi et al, 2009¹⁷. The question is how well has FAO taken advantage of such studies led by other partners, and built on them in support of the Government's pursuit of risk based strategies.

Effectiveness of global/regional programmes at country level

As indicated earlier several experts from FAO HQ and from the regional ECTAD unit in Bamako have visited Nigeria in the past few years.

Technical backstopping has come principally from HQ. A CMC-AH mission was deployed to Nigeria to provide investigative support following the first (and only) human case of H1N1, near Lagos¹⁸. In addition the OFFLU staff in HQ facilitated a 5-month scholarship for the head of virology (based at NVRI in Vom) to IZSVE to sequence viruses and perform phylogenetic analysis on H5N1 viruses. OFFLU also assisted in the shipping of samples to Padova, coordinated a LoA with IZSVE under which 352 samples were received and 80 viruses were sequenced (LoA report, December 2008). Furthermore, 31 accession numbers of

¹⁶ Pagani, P., Abimiku, J.E.Y., Emeka-Okoli, W. 2008. Assessment of Nigerian Poultry Market Chain to Improve Biosecurity. FAO, Rome, 58 pp.

¹⁷ Akinwumi, J., Okike, Iheanacho, Bett, B., Randolph, T., Rich, K.M. 2009. Analyses of the poultry value chain and its linkages and interactions with HPAI risk factors in Nigeria. Africa Indonesia Team Working Paper, in press.

¹⁸ FAO, 2007. Mission Report, RDT. Rapid assessment for prevention and control of HPAI, Nigeria 3 – 12 February,

the submitted sequences (NCBI) and a proficiency panel for AI/ND were submitted to Vom (and to 25 other countries as well).

There have also been specific activities led or backstopped by the wildlife group in Rome (FAO and Wetlands International have undertaken collaborative studies with the NVRI on active surveillance of waterfowl in certain wetland states of Nigeria) and by the Communication and the Biosecurity group (UNDP, Canada and Sweden funded projects). Another important contribution from FAO headquarters has been the input from the Pro-Poor Livestock Policy Initiative (PPLPI), which in a partnership project with IFPRI and ILRI, and supported by DFID, has provided a series of papers and research briefs on different aspects of HPAI impacts in Nigeria. Of particular relevance is a detailed assessment of poultry value chains in Nigeria, and of disease risks, mentioned above.

There have been several regional activities that have involved Nigeria, most notably involving laboratory capacity, wild bird dynamics and surveillance. From the sustainability point of view, there is clearly a need for much greater regional communication and cooperation in the effective surveillance and control of HPAI and other transboundary diseases in West Africa, given the highly porous borders, and the critical importance of poultry enterprises to livelihoods and the growing regional economies.

While a regional ECTAD unit has been established in Bamako (see separate report on the regional ECTAD unit in Bamako), this is not viewed by all in Nigeria as the optimal coordination, facilitation and sustainability mechanism. An argument was presented for a greater role of regional economic consortia (RECs) in providing sustainable mechanisms for international cooperation in transboundary disease preparedness and control, such as ECOWAS, recognising that while this organisation has strong and valuable political leverage, it has very limited capacity in animal health matters.

Sustainability and Impacts

The evaluation team noted that as a result of the HPAI outbreak, and of the apparent effectiveness to date of the response, livestock is very much back on the development agenda for Nigeria, and the animal health service has a new level of motivation and confidence; this is seen by some observers as an important element in the “re-branding of Nigeria”. Some of the successes include the positive role of the compensation programme, both in policy but also in the logistics of implementation under difficult circumstances. FAO played an important supportive role in the policy aspects. The avoidance of a vaccination programme is seen in Nigeria as a positive achievement; there was a lack of confidence in the feasibility and efficacy, and a concern over how an effective exit strategy could be developed.

The evaluation team found that FAO played a key role as a facilitator and a convenor of partners in Nigeria, and provided certain specific capacity building elements to Nigeria. But there have been also a multitude of players, and prominent among these the growing experience, expertise and confidence of Nigerian scientists in State and university roles. Unlike some of the other countries visited, the role of FAO as an overall leader in providing technical support is restricted to need based strategic contributions in agreement with the Government. The major leadership provided by the Nigerians have without doubt made activities surrounding HPAI prevention and control more sustainable and effective than if they were promoted or executed by external parties.

VII. CONCLUSIONS AND RECOMMENDATIONS

The evaluation team has made an assessment of the strengths and weakness of the FAO programme in Nigeria as follows:

Strengths	Weaknesses
FAO provided support to the development of a preparedness plan in advance of HPAI introduction requested by Government, and subsequent contributions to updating after HPAI occurrence	While understanding the complexities of veterinary services in a federal system, and the convenience for FAO of dealing with centrally-located federal players, inadequate programme resources are directed at the State level where implementation responsibilities lie
Current activities are aligned with priority areas agreed between FAO and the Government of Nigeria in the NMTPF-HPAI	There is a disconnect between the biosecurity messages being targeted at live bird markets, and the practices undertaken in markets. This requires sustained and innovative approaches targeted at behavioural change, coupled with market and slaughter infrastructure developments.
Good relationships between FAO Office and ECTAD team with Government authorities, who are capable and seem committed	Present work on biosafety unlikely to spread beyond pilot areas due to short duration of activity - even in pilot areas sustainability unlikely
Good coordination among UN agencies	No traceback for disease outbreaks and limited traceability mechanisms for birds in markets.
Good compensation system developed and implemented quite rapidly and transparently	Little use of risk-based surveillance, and pro-active development of risk-based response capacities
Considerable strengthening of diagnostic capacity under strong national leadership capacity	Little engagement and involvement of the private poultry sectors, particularly the sectors 3 and 4
International transparency and sharing of emerging virus sequence data	Lack of planned desk top and field simulation exercises
Following the completion of the USAID and EC projects, FAO funds have been used mostly for filling gaps; most funds from other sources and programme led strongly by Government.	No clear long-term vision by FAO of the role it should play, now that HPAI outbreaks seem to have waned
Regional collaboration by offering diagnostic services (Chad, Niger, Cameroon), training and supply of equipment (Niger) and hosting of the international consultative conference on HPAI within the ECOWAS facilities	

There are also some lessons learned in the past few years, such as:

- The continued difficulty in being able to specify the mode of introduction of HPAI, and the numbers of introductions. Implications of this on current strategic surveillance rather than risk-based surveillance, and the lack of sound risk-based response strategy.
- Live bird markets. Evidence from Nigeria and elsewhere as to the importance of these, the presence of projects to address the live bird market, but a substantial gap observed

between stated outcomes of interventions to address this and observations by the evaluation team on the ground in Abuja and Jos.

- Policy level activities. Challenges at Federal level. Previous high level coordination mechanisms have reportedly been negatively influenced by changes in senior personnel at ministerial level, and this has affected the former high levels of government commitment. This has reportedly had a knock-on effect on the technical group. The pandemic preparedness plan was started in 2007, and is still in the process of development.
- Inadequacy of an effective trace back system and the corresponding establishment of risk based assessments for surveillance and for interventions.
- With the decentralised political system in Nigeria, consideration should be given to greater direct engagement with key strategic support at the State level.

Based on the above, the evaluation team concludes that FAO has played an effective strategic supportive role to the Government of Nigeria in its efforts to tackle HPAI. The team also concludes that, building on the current NMTPF-HPAI, the FAO would merit from a much clearer strategic framework that demonstrates the linkages between emergency responses to HPAI and longer term contributions to health and food security in Nigeria.

Based on the above, the evaluation team recommends FAO as priority actions to:

- Develop, in partnership with government, public and private sector stakeholders, a clearer strategic framework of FAO's short and medium term contributions to HPAI prevention and control, and the interface with broader development targets of health and food security, paying particular attention to new initiatives of the World Bank and others. This should ideally be considered as part of any future revision process of the NMTPF-HPAI.
- Build on the growing epidemiology capacity, the sound laboratory infrastructures at Vom, and the broad level value chain studies carried out by other partners, and support Government in the establishment of an evidence-based risk assessment and risk management system targeted at HPAI, but with the capacity to be used for surveillance and response to other avian diseases, and indeed to other livestock diseases.
- Engage with the government veterinary services to explore potential mechanisms for multidisciplinary surveillance and preparedness mechanisms to be strengthened at the State level, identifying the specific roles that FAO could play in this process.
- Explore with government and the World Bank the more active engagement of FAO in future One World One Health umbrella initiatives currently under development, bringing together the Ministries of Health, Agriculture and Communications and with active support of FAO and WHO, in an Integrated Animal and Human Health Platform, moving from the fire-fighting phase, and building on the new confidence and capacity in livestock services emerging from the HPAI funding.
- Consider mechanisms for strengthening the links between ECTAD Bamako and ECTAD Abuja. While an independent ECTAD is probably justified in Nigeria, given its size and complexity, Nigeria is also situated centrally in West Africa and has been seen as the source of HPAI to other countries; there is a clear need for stronger communication between these institutions.
- Consider the future role of ECOWAS in the coordination and information exchange for HPAI, and indeed for stronger engagement in tackling other animal health priorities for the region.

Annex 1. List of People Met

- **Main contact** Tesfai Tseggai, Team Leader & Chief Technical Advisor
- **FAO-REPRESENTATIVE-NIGERIA**-Mr. Helder Muteia
- **ECTAD TEAM**
 1. Dr. Junaidu Kabir-Biosecurity & Livelihoods National Project Coordinator
 2. Dr. Ogu S. Enemaku- National Communication & Social Mobilisation Specialist
 3. Mr. Tafida Ahmed- Livelihood Specialist
 4. Mr. Moses Obikpe- Operations Officer
 5. Jeevanandhan Duraisamy- Emergency Operations Officer (on mission from FAO HQ)
- **FEDERAL MINISTRY OF AGRICULTURE AND WATER RESOURCES**
 1. Dr Joseph Njager-Chief Veterinary Officer and Acting Director of Veterinary Services-Department of Livestock & Pest Control Services
 2. Dr I. Gashash Ahmed-Epidemiology Unit& National Animal Disease Information & Surveillance (NADIS)
 3. Dr Demola Majasan-Planning & Logistics Officer
 4. Dr M.D. Sai'du- Component Co-ordinator AICP –Animal Health Unit
 5. Dr Junaidu Maina (retired first week of October 2009-Former Director of Veterinary Services)
- **DIRECTOR OF VETERINARY SERVICES , Plateau State- Dr.S. J. Akpa**
- **DIAGNOSTIC SERVICES- NATIONAL VETERINARY RESEARCH INSTITUTE- VOM, JOS, PLATEAU STATE**
 1. Dr (Mrs) Lami H. Lombin *MFR* –Executive Director
 2. Dr Tony Joannis-Virologist, Viral Research Department
- **WORLD BANK**
 1. Dr. Lucas Akapa-Senior Operations Officer
 2. Dr. Bola Adudi- Senior Agriculture Specialist
- **EUROPEAN UNION**- Ms Kate Kanebi – Food Security Desk, and Martin Mbonu, and Dr. Myriam soon to be in charge of HPAI , but currently responsible for Rural Development
- **UNITED NATIONS SYSTEMS IN NIGERIA**-Dr. Joyce Njoro- Avian Influenza Co-ordinator
- **USAID**-Mr. AbulKadir Gudugi-Team Leader for Agriculture; Dr. Ron Greenberg, director of agricultural development
- **POULTRY ASSOCIATION OF NIGERIA**
 1. Mr S.O. Akpa- Federal Director General
 2. Dr. Oletudu Agbato-Diagnostics & Service Provider Representative(Phone Interview)
- **LIVE BIRDS MARKET FIELD VISITS**
 1. **ABUJA GARKI MODEL MARKET** - accompanied by the ECTAD Team & CTA/Team Leader
Abuja Chicken Sellers Association of Nigeria (Director: Yusufu Dan Massani)
Saukin Chicken Centre (Secretary: Hasan Abdulmumini)
 2. **YARKAJI MARKET, Sarkin Mangu Street, Jos** -accompanied by the AICP Desk Officer-Jos
- **DEBRIEFING MEETING for FAO representative , CTA & ECTAD Team (Deputy Representative –Administration Ms E. Yeye-made a brief courtesy call)**

Annex 2. Documentation Reviewed

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