

PARTICIPATORY ACTION RESEARCH ON AVIAN FLU COMMUNICATION: FINDINGS FROM NIGERIA

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Hygiene in a commercial poultry farm, Lagos State

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ACRONYMS

AED	Academy for Education Development
FGD	Focus group discussion
IDI	In depth interview
LG	Local government
LGA	Local government area
PAR	Participatory action research
POFAN	Poultry Farmer Associations of Nigeria
UNICEF	United Nations International Children's Fund

EXECUTIVE SUMMARY

In October–November 2006, the Academy for Educational Development and UNICEF carried out a participatory research action (PAR) in relation to Avian Influenza (AI) in urban and rural sites in Kano and Lagos states. The objectives of the PAR were to appreciate local community members' understanding of the potential impact of avian influenza on different aspects of their lives; the relationships and connections among social, cultural, and economic factors and expansion of AI in the communities; and the existing communication resources that can be mobilized and the feasible interventions that can be undertaken for local responses to AI.

The findings revealed striking similarities in the communities' perception of the impact of AI and the connections among social, cultural, and economic factors in both states. According to community members, AI was a new disease that affected birds and that was characterized by an extremely high mortality. Affected birds did not respond to any treatment and died within a day. Most people said they believe that AI could come back and could infect and kill human beings. Community members were not sure of the causes and the origin of AI.

The study revealed that women and children are responsible for the care of backyard poultry chickens, and men are in charge of the care of chickens in commercial poultry farms. Participants' observations revealed that hygienic practices related to poultry care and management were below standard in both states. Regarding the ownership of chickens, everyone spoken to said that anyone in the community can buy and own chicken. However, only the household head can decide on the use of chicken.

In both states, chickens are used for consumption, gifts, sales, and rites. Chickens are perceived by most people as a wall of protection between evil spirits and community members. Almost every household raises free range chickens to meet cultural and social obligations. During the outbreak, people fulfilled their social obligation by giving other types of food instead of chicken. Most people believe that their gods accept nothing less than the blood of chicken, however, and chickens are required for rites. People were worried that AI could come back and kill all the chickens, and community members would lose all protection against evil spirits.

Most people stopped eating chicken during the outbreak of AI. However, some insecure people seized this opportunity to eat and sell cooked chickens. Communities reported that commercial poultry farmers were the hardest hit by AI because of the massive death of chickens, the drastic fall in the price of chicken, and the massive loss of income and jobs.

During the outbreak, the government disseminated through the radio and the television two sets of contradictory messages that created panic, fear, suspicion, and doubts about AI. Community members felt neglected and abandoned by local authorities during the outbreak of AI. Community members reported that traditional leaders were not informed and involved in any action undertaken by local authorities during the outbreak.

Poultry farmers associations (POFAN) held rallies at different sites in the community to sensitize people on AI and how to handle the situation. At the rally, members of the association held discussions on AI, killed, cooked, fried, and roasted chickens, and then ate them in the presence of people to convince them that chicken is safe for eating when it is well cooked. They also disseminated messages on the methods of prevention of AI.

After witnessing the devastating effect of AI on livelihoods, community members said they were ready and willing to adhere to and comply with measures to prevent AI. If provided with the accurate knowledge on the causes of AI and on the methods of prevention of AI, community leaders said they would devote their time to sensitize and educate community members.

The resources available in the community to fight AI included community leadership; community members as volunteers; space for meetings; hygiene materials such as brooms, rakes, headpans, dustbins, soap, and chairs; and communication systems (megaphones and town criers).

The main recommendations of the study with regards to communication interventions to prevent and to mitigate the impact of AI included the following:

- Local authorities should engage in a dialogue with community leaders to reflect on the recent outbreak of AI and to discuss the lessons learned for the way forward.
- Communication interventions to fight AI should be concentrated at household and community levels, because of the impact at these two levels. The recommended practices to prevent AI and to mitigate its impact should be implemented at these levels.
- Communication interventions should be designed, implemented, monitored, and evaluated with community leaders.
- Local authorities should impart community leaders with the knowledge and skills to drive the fight against AI at the community level.
- Local authorities should acknowledge, support, and encourage community initiatives and actions to fight AI.

OBJECTIVES OF THE PAR

The objectives are to appreciate:

- Local community members' understanding of the potential impact of avian influenza on different aspects of their lives (e.g., livelihood and health) through a community-guided process using participatory research methods. The focus of inquiry includes their knowledge, perceptions, and concerns about AI.
- The relationships and connections among social, cultural, and economic factors and expansion of AI in communities, emphasizing possible facilitators and barriers to resource mobilization or changes in practices to prevent AI/ reduce the negative impact of an outbreak.
- The existing communication resources that can be mobilized and the feasible interventions that can be undertaken for local responses to AI, for example, community actions to minimize impact of AI, and reliable, trusted, and effective sources of communication.

Information on these issues will help to determine the possible responses of communities to AI in each of the following scenarios: 1) controlled and contained AI outbreaks; 2) widespread AI; and 3) pandemic human influenza.

The outcome of the work will be a summary of social conditions in Nigeria may affect efforts to prevent, contain, and control AI and will include a set of recommendations for practical, effective, and measurable communication strategies for addressing this critical new threat.

OVERVIEW OF THE METHODOLOGY

From the design of the project, Kano and Lagos States were selected for the PAR because of their ecological, ethnic, religious diversity, and also the intensity of AI outbreak. Kano and Lagos State have the highest number of AI cases in Nigeria.

Kano State is located between latitude 12° 03' N and longitude 08° 32' E. It is both an agricultural and a commercial state. It has a land mass of 20,760 square kilometers, which lies in the Sudan Savannah apart from a few portions in the south that lie within the Guinea Savannah. The state is bordered by Katsina, Jigawa, Bauchi and Kaduna States. With a population of about 10 million people, it is the second most populous State following Lagos. In Nigeria it is also one of the most homogeneous State, with more than 95 percent of population being Hausa-

Fulani with one religion Islam. Kano state is among the 13 Nigerian States affected by the flu. It has also recorded the highest number of bird deaths as a result of the disease.

Lagos State is located between latitude 6° 35' N and longitude 3° 02' E. On December 12, 1991, Lagos ceased to be Nigeria's political capital; nevertheless, it remained the nation's economic and commercial capital. Lagos State has 20 local government areas (LGA). Lagos State is completely urbanized. Lagos State is the smallest state in Nigeria, yet it has the highest population. According to the 1991 national census, the State is estimated to have between 10.5–15million people. Lagos State is inhabited by the Aworis and the Eguns. While the Aworis are found scattered all over the State, the Eguns are concentrated mainly in Badagry. The State is essentially a Yoruba speaking environment, but is also a socio-cultural melting pot attracting different tribal groups from all over Nigeria and foreigners alike. This is due to its sound economic base and socio-political importance, both of which attract a high-rate of rural-urban migration to the State metropolitan region. Lagos State is Nigeria's commercial centre.

In Kano and Lagos States, one site from the rural LGAs and one site from the urban LGAs were selected for the PAR.

The selection criteria for each site included the following:

- Sites affected by the recent outbreak of AI
- Presence of various categories of poultry raisers
- Accessibility
- Interest of local authorities to participate in the research
- Community facilitators selected by local authorities to participate in the research
- Availability of local authorities to participate in in-depth interviews and in a meeting at the end of the research for the presentation of the findings

SITE SELECTION PROCESS AND PROFILE OF THE SITE

Site Selection Process

In each state, the PAR was carried out by a research team comprised of a team coordinator and four facilitators. The Kano and Lagos teams were overseen by a team leader based in Kano. The team coordinator launched the PAR in his state with an advocacy visit to the state authorities. During the visit, the purpose and objectives of the research were presented to the authorities and their support was sought. State authorities proposed a list of LGAs in which to conduct the research.

After the support of the state level was secured, the team coordinator initiated contacts with the local government area (LGA) chairman in urban or rural areas. The team coordinator also presented the purpose and objectives of the research to the LGA chairman. After the LGA chairman expressed interest in participating in the research, the team coordinator made the following request:

- Permission to be granted as the surveillance disease officer of the LGA to take part in the research
- Selection of community facilitators based on the criteria given by the team coordinator
- Availability of the LGA chairman and other community members to participate in in-depth interviews and in a meeting at the end of the research during which findings of the PAR will be presented to the community

The team coordinator also solicited the LGA's chairman's suggestions on PAR sites in his LGA.

Profile of the Selected Sites

The PAR sites in each State are listed in Table 1.

Table 1: PAR site in each state

	Ecology	Type	LGA	PAR Sites
Kano State	Savannah	Urban	Tarauni	Limawa
	Savannah	Rural	Gezawa	Jogona
Lagos State	Coastal	Urban	Ojo	Iba
	Coastal	Rural	Badagry*	Ajara Topa

* Badagry, though the most rural LGA in Lagos State, exhibits some features of urban areas.

Kano State sites

Jogana is one of the eleven wards that constitute the **rural** LGA government area of Gezawa. Gezawa is one of the four LGAs of Kano State. Jogana is an old railway settlement and is well known for its supply of poultry (especially local chicken) to the capital. Every day, the 'Yan-Jogo' (people who sell chicken in a local basket) bring chickens on their bicycles (strapped with the local basket) from neighboring villages to Jogana. There is a special market called Yan-Jogo market where they pack the bicycles and carry the chicken in commuter buses to Kano. This is one of the reasons that influenced the choice of Jogana out the eleven wards in the local government area.

Limawa is an **urban** community within Hotoro ward in Tarauni LGA. Limawa lies 2 kilometers from the government house along Kano-Maiduguri Road. The Limawa Community has a population of approximately 4,000 people. It has a large settlement of government quarters, including the Central Bank of Nigeria quarters, Kano Mobile Police Quarter and State Government Official quarters. It also has a concentration of commercial poultry farmers, most of whom reside in these government quarters. Tarauni market, frequented by the Limawa community, lies about one kilometer west of Limawa toward the state government house. The market is popular for poultry trading (in both live and dressed)² form. The majority of the community members are traders.

Lagos State sites

Iba (Urban) – Ojo LGA

Iba town is densely populated, comprising of Awori people (local indigenes) and different Nigeria ethnic groups: Igbos (easterners), a few Hausa (Northerners), and people from other parts of Yoruba land. Iba town has a King (Oba) overseeing the local affairs of the community. In Iba town, there are about 20 title chiefs who oversee the local community and report to the King directly. The percentage of Moslems and Christian amongst the local Awori people can be estimated to be 60% and 40% respectively. The Igbos and the Yoruba in the community are predominantly Christian while the Hausas are predominantly Moslem. The local Awori people, whether Moslem or Christian, still practice traditional religion and have shrines located in their compounds.

The majority of people living in this settlement are businessmen of different trades. There are also public servants and petty traders in the settlement. The most common source of income among the indigene in Iba community is mat weaving, mostly done by women. Fishing is the major occupation for local Awori men. They fish more during the dry season when fish are said to be more plentiful, because

² Dressing the chicken involves; slaughtering, removing the feathers and making it ready to be cooked

the river is less full. There are 2 big poultry farms of over 1000+ birds in the settlement. The community has a pig farm, a fish farm, and many backyard chicken raisers.

Ajara Topa (Rural) - Badagri LGA

Ajara Topa community is one of the 14 communities under Badagri Central LG. To the South is the boundary with Badagri Seme Expressway, the road leading to the Republic of Benin. It is a rural dwelling of Egun people situated at the northeast of Badagri town. Ajara Topa community is governed by a local Chief who oversees the local affairs of the community and who is accountable to the King of the town.

The community has two hotels and one guest house. The Badagri LG secretariat is situated in the community. The community also has a town hall, one community health post, private hospitals, a banking hall, churches, mosques, shopping malls, lock up shops, schools, agric settlement where there are commercial poultry farmers, poultry houses, and other types of houses (bungalow, duplex, mini flat). It also has a bakery, a mechanic village, and a night market. There is a big refuse dump located at the eastern part of the settlement, very close to the swamp. Different types of religions are being practiced by the people in the Ajara Topa community. They are primarily Christian, but still practice the traditional worship of their different gods. There are a few Moslems in Ajara Topa. In order to generate income, some men are involved in fishing, trades (motorcyclists, bus drivers, and conductors) while some are bricklayers, barbers, tailors, carpenters etc. The majority of the women are involved in trade activities such as weaving traditional mats, tailoring, food vending, hairdressing, etc. Some men and women are involved in smuggling (fayawo or sharp - sharp). A small percentage of men and women are civil servants.

APPROACH, TOOLS, AND SCHEDULE OF DATA COLLECTION

Approach

Because PAR emphasizes collective and individual actions and guides communities to identify practical interventions, men, women, and young people living in the PAR sites were involved in all phases of the research. Community facilitators participated as co-researchers in the research team. At the end of the PAR in each site, a meeting was held with community members to present the findings of the research and the action plan developed with contribution from community participants.

Before the beginning of PAR in Nigeria, a literature review was carried out in order to gather information on the AI situation in Nigeria.

Tools

Eleven PAR tools applied to the context of AI were used in PAR sites with men, women, and young people to provide them the opportunity to exchange ideas about AI and discuss courses of action. The details on the eleven tools used are listed in annex 1. The tools used included community mapping, transect walks, participants' observation, seasonal calendar, focus group discussion, bean quantification, Venn diagram, in-depth interviews, causal flow diagram, matrix ranking, force-fields analysis, and stories. The tools were used in the order they were listed.



Seasonal Calendar, Women, Lagos

The first 2–3 tools helped the research team establish contact and gain acceptance from the community members before holding individual or group conversation and interactions to gain a deeper knowledge and understanding of the community perceptions of the impacts of AI and actions to be undertaken to prevent AI and mitigate its impact. Community mapping was the first exercise carried out with community members in each site. This exercise helped establish a good rapport with the men, women, and young people and involved them in preparing a visual representation of their community. Causal flow diagramming was carried out on the fourth day of PAR to help men, women, and young people list the causes and consequences of AI and discuss specific actions to be undertaken to prevent and/or mitigate the impacts of AI.

The PAR tools were used either with individuals or groups of men, women, and young people separately. The PAR exercises were held in a friendly and safe environment to allow each member to comfortably participate and express his/her views.

Data Collection

Data collection was carried out from October 25th to November 16th. Data collection was carried out in each site by a team comprised of a team coordinator and six facilitators. Three out of the six facilitators were community facilitators selected among community members. The selection criteria for community facilitators included the following:

- Credible and well-respected person in the community
- Gender consideration: equal mix of males and females

- Age consideration: not too young and not old, between 25–45 years of age
- Availability to participate in the PAR

Training of the country team

Prior to conducting the actual research, the Nigeria team (team leader, three team coordinators, and six facilitators) was trained by the AED AI advisor from September 26th to October 1st in Ikorodu/Lagos. The training of the country team followed exactly the same patterns/steps/methodology used in the community sites before the beginning of PAR exercises. Refer to **annex 2** for the detailed planning of PAR activities in one site. As shown in a2, the training included the following:

One-day classroom training:

The first day of the training provided the opportunity to introduce each team member and to have them get to know each other. Presentations were done and discussions were held on AI and participatory action research.

PAR exercises during five days:

At the end of each PAR field exercise, the PAR team members worked together to consolidate their transcript and to present the information generated to the entire team. Feedback was provided on the level and quality of interactions with the community, and on the content of the information presented.

On the seventh day of the PAR field activities, the PAR findings and the action plan developed from the information collected were presented to community members in a meeting facilitated by community facilitators.

Table 2: Schedule of PAR data collection activities

Day #	Activity
1.	Team building Orientation training for community facilitators, exercises, and role plays
2.	Orientation on community mapping Community mapping (men, women, youth) Orientation on transect walk Transect walk in the community Feedback on interactions with community and data review
3.	Orientation on participants' observation Participants' observation in the community Orientation on seasonal calendar

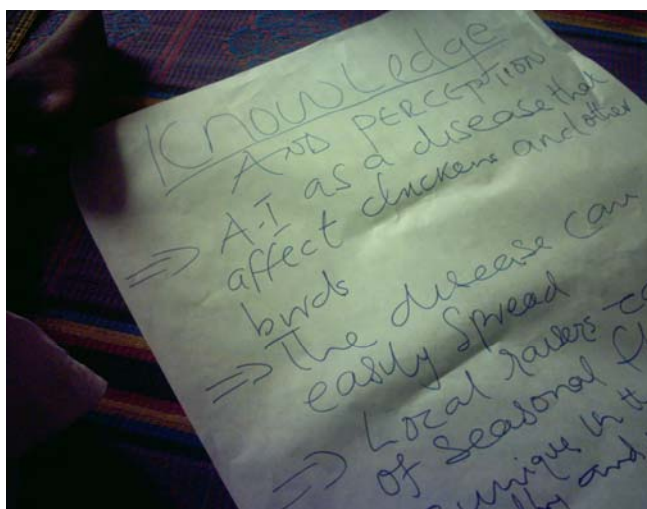
COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

Day #	Activity
	Exercises on seasonal calendar with men, women, youth Feedback on interaction with communities and data review
4.	Orientation on focus group discussion Focus group discussion Feedback on interactions with communities and data review
5.	Orientation on in-depth interview In-depth interview with community leaders (men and women leaders, agriculture extensionist, veterinary doctor, poultry trader, community volunteer, village chief, and local authority) Orientation on Venn diagram and bean quantification Exercise on bean quantification and Venn diagram with men, women, and youth. Feedback on interactions with communities and data review
6.	Orientation on causal low diagramming, preference matrix ranking, story telling and force-field analysis Exercises carried out with men, women, and youth Data review Preparation for restitution
7.	Restitution with community Presentations of the findings and the action plan Questions, comments and corrections Closing remarks.

PAR field activities took place from October 25–November 16, 2006.

Data Analysis

A three-step process analysis was implemented to analyze the data collected and draft the report. The findings were identified and validated from the triangulation of the information generated from at least two tools. Refer to **annex 3** for PAR methods by research theme.



Preparing for Restitution Meeting, Kano

At the end of the PAR in each site, the team coordinator and facilitators analyzed the data collected and drafted the PAR site report. The information collected was organized to address the three objectives of the study. Findings related to gender and age were highlighted. The report was reviewed by AED headquarters. At the end of the PAR in the two sites in each state, and after the PAR site report had been drafted, the

team leader and team coordinator reviewed the data collected in the sites in each state and drafted the state report

At the end of the PAR in the two sites in each state, and after the PAR site report had been drafted, the team leader and team coordinator reviewed the data collected in the sites in each state and drafted the state report.

At the end of the PAR, the AED AI advisor, the team leader, and the team coordinators reviewed the data in both states and drafted the country report.

FINDINGS

This section presents the PAR findings on controlled and contained AI, widespread AI, and pandemic AI.

CONTROLLED AND CONTAINED AI

The findings of PAR are organized to address/answer the questions under each of the three objectives of the study.

COMMUNITY MEMBERS' UNDERSTANDING OF THE POTENTIAL IMPACTS OF AI IN THE VARIOUS SECTORS OF LIFE

Community's knowledge, perceptions, and concerns about AI

What is Avian Influenza?

Avian Influenza is a new bird disease in Nigeria. The general consensus in rural and urban communities in both Lagos and Kano states indicated that the disease is new and has no name in the local languages. However, the communities used the observed differences between AI and the known local birds' diseases to assess specifics of AI. One common feature recognized by both communities was the speed and number of birds killed by AI in comparison to the local seasonal flu. They also identified that while AI-infected chickens do not respond to any treatment; chickens with seasonal flu effectively respond to treatment and are not affected in the same magnitude. In both Kano and Lagos communities, there was no ambiguity in the perception of AI as a completely different disease from the seasonal bird flu.

The communities in Lagos and Kano states refer to the seasonal chicken diseases as 'ogo' (Egun Language), *lorun-lorun* (Awori), *Lukuluku Eyigbajo* and *Koli* (Yoruba); "Mashashsharar tsuntsaye" (Chicken flu) which normally occurs during the cold season (*Harmattan*; December – January). The severe form of the disease is called "*Kudumus*" (quick killer). In both rural and urban communities in the two sites were able to differentiate the similarities and differences between the two types of bird flu based on time of manifestation, presentation of the flu at outbreak and its consequences. They explained that seasonal bird flu happens during *harmattan* period and rainy season. The seasonal bird flu does not kill birds in large numbers within a short period as AI did.

However, despite this seemingly general consensus in the two communities in Kano and Lagos, there were some perceptual variations among some community members on the manifestation of AI. Some members of the community accept the existence of the disease and believe that it is a sign of the end of times (i.e., the World coming to an end). Others deny the mere existence of the disease. In between these two groups, others say that they do not know much about the disease (Table 3).

Results of the focus group discussion revealed that the group of men in Kano and urban Lagos described AI as a disease that kills chicken in large numbers within a short period and that the disease only affects chickens, but not human beings. However, a group of men in rural Lagos believe that the disease is simply the handiwork of government trying to make life miserable for the people. Some think that AI was orchestrated by government and rich people so as to take over the poultry business.

The rural women in Kano are forthright about admitting their ignorance of the disease. They simply pointed out that "We do not have full knowledge about it." Also a rural woman poultry farmer lamented that "we are ignorant about the disease; we have never seen it before".

A group of men in Lagos believed that AI can even affect other domestic animals like pigs, goats etc. After describing the differences between AI and the local flu (*kooli*), they gave a succinct explanation of how birds infected by (*kooli*) were locally treated (Box 1). They explained that chickens affected by AI do not respond to treatment, they die within 1 or 2 days of infection, and turn to a green color from beneath the wings. Some believe that AI is still around.



Focus group of men, Lagos

Box 1: Local treatment of seasonal bird flu in Lagos

Seasonal bird flu (*kooli*)’s victims are treated by separation of the sick birds and application of hot pepper with warm water, salt, tetracycline capsules and *ogogoro* (local gin). In severe cases of the disease (*kooli*) is treated by cutting of ‘*tagiri*’ (wild orange) into pieces and applying it into the chickens’ drinking water, type of treatment depends on the severity of the sickness. In extreme cases infected birds are culled.

The youth in urban Kano, who coincidentally by virtue of their trade of chicken dressing, came in direct contact with the AI infected chickens, described the symptoms of the disease as follows: excessive watery discharge from the mouth and nose of the affected chicken, birds become thirsty but cannot drink water, and greenish claws and the comb which later turned to somewhat blue in color. The young people in the urban area also believed that AI could affect humans. They pointed out that AI is not a new disease, but the recent outbreak was seen as unique, in that it was more deadly and easily spread to other chickens and birds. They also pointed out that the disease appeared to have more impact on egg laying chickens than on broilers, local chickens and cockerels. The assertion by the youth that ‘the disease is not new’ is different from the views of other community members who said that the disease is new and nobody has seen anything like it before.

Table 3: Level of knowledge about Avian Influenza among various categories of community members

SOURCE OF INFORMATION	PERCEPTION OF WHAT IS AVIAN INFLUENZA (BIRD FLU)			
	KANO		LAGOS	
	RURAL	URBAN	RURAL	URBAN
Group of Men (FGD)	AI is new disease similar to the seasonal flu but it kills chicken in large numbers	A disease that kills chickens in large number. It affects chicken only but does not affect human beings	AI has been there before but was taken over by evil spirits. English people are trying to give it a new	AI is the handwork of Government to make life difficult for people
Group of Young men (FGD) Kano	Bird disease that could affect humans	A disease that affects poultry especially commercial poultry	AI deliberately induced to take over the poultry industry by the rich and powerful	It came from foreign countries through the northern part of the country
Group of Youth (men and women) Lagos	It is an induced disease from Western countries to destroy the African	AI is not new, but this outbreak was more severe and deadly		

	economy			
Community Leader	AI affected commercial raised chicken Local chicken were not	AI is similar to seasonal flu, but different in number killed	AI is like seasonal flu but kills in larger number	AI killed many birds
Poultry Farmer	AI affected commercial chicken. Symptoms: Reddish head and greenish feces	AI is more deadly than any other epidemic	AI has been in Asia but it has not become Pandemic Nigeria is exaggerating about AI	AI is a disease of birds different from seasonal flu but can not affect humans
Women	We are ignorant about the it, never seen it before AI killed commercial chickens in large quantities	AI is a disease that kill commercial birds in large number	AI is a sign of the 'end time'	AI is a sign of the 'end time'

Causes and origins of avian influenza

There are different opinions as to the origin, sources, and causes of Avian Influenza in Nigeria. The group of men in urban Lagos identified: evil wind; air pollution of nuclear weapons used by the warring countries of the world; birds migrating from Asian countries and South Africa as the sources of the AI in Nigeria. The group of men in Kano urban also believed that the disease was caused by air movement, changes in weather conditions, improper handling of birds in transit and improper hygiene.

Whereas the group of men in rural Lagos were of the opinion that the world is coming to an end and all kinds of evil things like AI are manifested as signs. The group of men in Kano rural area indicated that the cause of AI is not known to them for sure, but added that it might be transmitted through the air, lack of medication, and improper observance of hygiene might contribute to its spread.

The women in Lagos believed that AI was caused by restriction of birds in a confined space, improper feeding of birds which led the birds to eating their droppings containing protozoa, earthworms, white polythene foam being used for packing electronics, eating from dirty gutters, cold weather, and inadequacy of medications in poultry farming. They also expressed their concern that AI can be attributed to congestion of birds in the poultry houses, wounds on the birds' bodies exposing them to infection, interaction of poultry birds with wild birds, and offensive odor from piggery/poultry farms.

The urban women in Kano indicated that AI is an airborne disease that can be transmitted through the air. They believe that local breeds are infected through contact with foreign birds. The rural women who first indicated that they do not know the actual cause of the disease later said that they heard the disease was brought in by migratory birds and that if humans consume improperly cooked infected chickens they can also get infected.



Community mapping with youth, Lagos

Youth both in Lagos and Kano have the notion that AI was deliberately introduced from the western countries in order to subvert the economy of the African countries. But the youth from Lagos and Kano differ in their opinions of the method by which the disease was introduced. Kano youth think the disease is transmitted through imported day-old chicks, vaccines and feeds from western countries through the south. Whereas Lagos youth maintained that it came from foreign (*Oyinbo*) countries through the Northern part of the country.

Sources of knowledge/information about AI

On the source of their knowledge of AI, the urban communities in both Lagos and Kano indicated that they obtained the information through radio and television. But communities in rural Lagos received their set of information about AI through the pandemonium and confusion created at the Nigeria-Benin Republic border town Seme, where egg retailers from Badagry, who normally take eggs to the border for sale, were denied access and faced massive destruction of their goods (eggs). But the rural community in Kano first heard about the disease over the radio.

Perception of The Impact Of AI

The system of poultry production is classified into four main areas; (i.) village extensive or free range, (ii) backyard (intensive), (iii) semi-commercial and (iv) commercial or integrated poultry. The foreign breeds are locally referred to as Agric chickens by most communities in Nigeria. For the purpose of this discussion,

poultry industry is re-classified into two categories: local and foreign breeds. The local breed refers to sector I; where the system of production is free-range and the birds used are local or foreign breeds. The second, commercial system uses intensive mode of production and the birds used are foreign breeds (popularly known as Agric chicken or simply “agric”). This second category will encompass sector II, III and IV, based on the responses received from the field.

On the direct impact, where AI infected chickens faced massive death, there were clear indications from both Kano and Lagos that it was mainly the commercial poultry farmers that were affected by massive death of chickens. Although not corroborated by other groups, there was a specific indication, by rural youth in Kano that layers (chickens kept for laying eggs) were most affected by the disease. In addition to that, the egg sellers from Lagos rural community also faced direct losses through destruction of eggs by the Republic of Benin authorities at the Nigeria-Benin Republic border, who were preventing them from transporting eggs into their country, as they did freely (or as part of their livelihood) before the outbreak. But generally the impact of AI in Nigeria, as revealed by the study, can be categorized into direct and indirect impacts as follows:

Direct impact

- Massive deaths of birds and consequential loss of money by poultry farmers.
- Loss of jobs by poultry workers as a result of closure of affected farms
- Reduced and total withdrawal from consumption of poultry meat and eggs.
- The fear that it could infect human beings
- Physical destruction of Chickens and eggs.

Indirect impact

- The great loss caused hypertension or death of the poultry owners.
- Leads to indebtedness for poultry farmers and traders.
- Fall in prices of poultry products
- Environmental pollution and offensive/unpleasant odour everywhere.
- Increase demand for fish and meat as substitute to chicken
- Increase in prices of meat and fish due to increased demand.
- Reduction in the purchase of feeds, veterinary drugs and services

- Reduction in level of investment in poultry business
- Increased risk level in poultry business

Impact of AI on livelihood

Income

In-depth interviews with poultry farmers from the two states revealed that poultry contributes to more than 75 percent of family income of commercial farmers and less than 25 percent of local poultry farmers. Although poultry farmers were not equally affected in the two states, there were clear indications that farmers lost significantly as a result of the disease/outbreak. While some lost almost all of their birds, others who were not affected by the disease suffered greater losses due to a fall in market prices as a result of low demand by consumers and higher supply by producers.

Most consumers in the rural and urban communities in the two states responded to the first set of information aired about the disease, which advised people to avoid getting in contact with the diseased birds, by completely stopping the consumption of eggs and chicken meat. This led to the fall in demand for poultry products.

Farmers, whose poultry farms were not infected rushed to sell off their chicken to avoid incurring losses. The cumulative actions by individual farmers to sell birds resulted in serious glut of chicken and eggs in most markets. This led to lowering prices of eggs and chickens.

The outbreak also led to massive loss of jobs of poultry attendants and others providing services to the industry such as veterinary doctors, egg retailers, feed millers, sellers, and vet drugs vendors etc. The job losses and its impact on income level experienced during the outbreak affected the morale and self confidence of the people; because they were affected like never before by an unknown disease that they still did not know how to prevent. The morale of poultry products sellers was very low during the outbreak and its psychological effect on those who lost “finances” cannot be overemphasized. The frustration heightened when farmers took their products to the markets only to discover that AI has affected market price. In Kano, chickens worth ₦ 500 were sold for a mere ₦ 50. In Lagos, chicken worth ₦ 800 before the outbreak were sold for ₦ 150.

Box 2: Pains of AI for poultry farmers in Lagos

A poultry raiser lost all of his 4,000 birds and sold his car to begin life all over. A woman who had 3,000 layers and 500 broilers lost everything to the outbreak. She now works as a poultry attendant instead of as the proprietor of a poultry farm.

Box 3: Impact of low prices on a poultry farmer, Lagos

He referred to the previous experiences of massive deaths of poultry as disheartening and hypertensive. AI did not affect his birds but he lost a lot of money on eggs production. He explained that all the eggs his layers produced within three months of AI outbreak were wasted. There was no sales, thus they used the eggs as foods in the fishery and piggery. He had to sell his fish worth ₦400,000.00 to pay for the feeds he purchased on credit before the outbreak.

The negative impact of AI on household income as related by the respondents in Lagos and Kano affected the standard of living at the household level and deprived them of meeting regular needs, like paying school fees, household necessities and other essentials. Limited income of poultry farmers and households contributed to limiting their purchasing power and their capacity to pay for other services such as school fees, health care services, and medications.

Food security

Poultry is not the major source of protein in the rural areas of both Lagos and Kano, where they usually only eat chicken on special occasions such as weddings and other festivities. However, it is often consumed by the urban dwellers in both sites. The impact of AI on food security is a more indirect than direct. Fear of human infection and death prompted educated and rich people to stop consuming poultry, thereby causing a shift to substitutes such as beef and fish. This shift increased the prices of the substitutes especially frozen fish. This is an indication that if fish, the most affordable food to the low-income earner, slipped away from their reach, they might not be able to meet their nutritional needs.

This scenario of falling poultry prices created a unique opportunity for food insecure populations to consume poultry products. Some also exploited the situation to make money (Box 4).

Box 4: Youth made money during AI outbreak through sales of chickens (Iba, Lagos urban)

Some youth confessed that they made money out of the outbreak because some farmers were selling their chickens at giveaway prices at Ayedoto Farm Settlement, as low as ₦150.00. They took advantage of this by buying plenty of chickens and reselling them in their community for ₦250.00. They do not know whether the chickens they bought and sold had AI or not.

Perceptions of Concern

Both Lagos and Kano community generally believed that AI is a deadly disease that can be transmitted to human beings through direct contact with or consumption of infected chickens. They believed that people who live in areas where chickens are raised: poultry workers, poultry sellers, veterinary doctors and consumers are more vulnerable to the risk of AI infection. Although a majority of people in Lagos and Kano were more inclined to believe that AI is deadly and could affect human beings as a result of close contact with affected birds or its consumption; others doubt that the disease affects human and may have lethal consequences. The latter continued eating chicken. Some see no difference between the bird flu of preceding years and the present day AI, but claimed that there are more spiritual problems attached to it now and accused the “English”³ people of trying to give it a new name.

There is also a consensus that people who do not have chickens could be affected if they eat chickens, or live in an environment where chickens are raised because infection could be passed on through consumption and air could blow it from poultry into the environment, which could lead to upper respiratory infection (cough and catarrh). Furthermore, there is a high level of interaction between chickens and people because chickens enter houses and scavenge food from food plates/pots left unattended to. Although AI hit commercial farms the hardest, most consumers did not make a distinction between local and foreign breed when it comes to consumption. They simply stopped eating chicken altogether. As such, the outbreak affected everybody related to poultry in different ways.



In-depth interview with the king in Lagos

Community people were afraid because they believe that anybody who gets in contact with affected chickens could be infected by the disease (bird flu) and that anybody who eats the dead chickens will die. While most believe that AI is still very much around but cannot affect local birds, others believe that it has gone but can still return. While the *Oniba* (king) of Iba Lagos urban believed that they can practice rituals to prevent AI from penetrating their community, women in the rural and urban communities of Lagos and Kano state that they will resort to prayers to God to prevent widespread AI.

³ Westerners

RELATIONSHIPS AND CONNECTIONS AMONG SOCIAL, CULTURAL, AND ECONOMIC FACTORS AND EXPANSION OF AI—FACILITATORS AND BARRIERS TO CHANGE

The study also revealed the cultural and socio-economic values and importance attached to poultry keeping, especially chickens at the different levels of operation in the rural and urban communities of Lagos and Kano.

Social

The different types of animals and birds raised by households in the rural and urban communities of the two States includes: domestic birds such as chicken, ducks, turkey, pigeons, guinea fowls and geese; and animals such as goats, ram, sheep, cattle, cats and dogs can be found at the household level.

Ownership of Chickens

There is no restriction to the ownership on rearing of chicken (agric and local) in both States. All categories of people in the communities own chickens: men, women and children. The only apparent indicators of ownership are interest and economic power to purchase chicken for rearing. Anyone who uses his or her money to buy chickens or any of the animal or birds mentioned above is the proper owner regardless of age or gender. If it is a gift, the ownership is immediately transferred to the receiver. Generally, chickens outnumbered any other animal or bird being raised at household level in both States at rural or urban centers.

In theory, it's whoever buys the chicken that owns it and makes the decision on what to do with it, but the reality is somehow different. While there is a general consensus on the fact that owners or any member of the family can decide on when to slaughter and eat chickens at the household level in Lagos and Kano, the women in both States affirmed that their husbands can give out chickens or eggs in their absence, but the children cannot give them out except when they are instructed to do so. Husbands' endorsements are needed when chickens are to be given out or consumed in a household. Out of respect for men, women seek the approval of their husband before slaughtering a chicken for eating in the household; otherwise he could refuse the meal. Women also believe that younger people are still under the control of their parents and cannot take decisions on their own on giving out chickens they own because as the head of the family. Mothers can make decisions if the man of the house is dead or absent. The general opinion is that only the parents have the right to give out chickens as gifts or used for consumption.

This means that during the outbreak of AI, consent from the head of the family is mandatory to kill affected chicken or cull poultry.

The rural and urban communities that were studied in Lagos and Kano present many similarities and some differences in terms of types of chickens and farming methods. The study revealed that although there are four farming methods, communities referred to them as two; local and Agric (Table 4).

The table below describes the type and mode of rearing chickens in the household and shows the different categories of ownership in Lagos and Kano (rural and urban) communities.

Table 4: Mode of rearing and categories of chickens

	STATES	
TYPE & MODE OF REARING	LAGOS	KANO
Free-range	<p>Raised in a household with little or no care by the raiser. The birds are free to move around and search for their food.</p> <p>1 – 20 chicken raised for family consumption Buys stock from professional poultry farmers</p> <p>Most of the chickens raised at this level are local birds, though raisers at times buy foreign birds and still raise them as local birds.</p> <p>These are mostly raised by low income earners, in the rural and urban areas and they raise the chickens solely for consumption and gifts.</p>	<p>Raised in a household with little or no care by the raiser. The birds are free to move around and search for their food.</p> <p>1–20 chicken raised for family consumption Buys stock from professional poultry farmers</p> <p>Most of the chickens raised at this level are the local birds, though raisers at times buy foreign birds and still raise them as local birds.</p> <p>These are mostly raised by low income earners in the rural areas. They plan and raise the chickens solely for economic value to meet insurgent needs and rarely consumes them, except at festivals which are seasonal.</p>
Small Scale (backyard poultry)	<p>Raised in cages or enclosures within the household. The raiser provides them food, water and cleans out their waste. They are relatively restricted</p> <p>20–50 chicken raised for family and for sale</p>	<p>Raised in cages or enclosures within the household. The raiser provides them food, water and cleans out their waste. They are relatively restricted.</p> <p>20–50 chicken raised for family and</p>

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	STATES	
TYPE & MODE OF REARING	LAGOS	KANO
	<p>Raisers may or may not have other means of gaining income</p> <p>Most of the chickens in this category are foreign breeds which are restricted in cages or kept in deep litter system.</p>	<p>for sale</p> <p>Raisers may or may not have other means of gaining income</p> <p>Most of the chickens in this category are foreign breeds which are restricted in cages or kept in deep litter system.</p>
Large Scale (Backyard)	<p>500 or more chicken raised for business.</p> <p>Raiser has invested money and is unlikely to do anything else.</p> <p>Raiser keeps the chicken in battery cages and is responsible for their feeding, medication and care.</p> <p>Employs workers Raiser expects to make profit.</p> <p>Chickens raised are predominantly 'foreign birds' (Agric)</p>	<p>500 or more chicken raised for business.</p> <p>Raiser has invested money and is unlikely to do anything else.</p> <p>Raiser keeps the chicken in battery cages and is responsible for their feeding, medication and care.</p> <p>Employs workers Raiser expects to make profit.</p> <p>Chickens raised are predominantly 'foreign birds' (Agric)</p>
Semi-Commercial	<p>1,000 or more chicken raised for business.</p> <p>Raiser has invested money and is unlikely to do anything else.</p> <p>Raiser keeps the chicken in battery cages and is responsible for their feeding, medication and care.</p> <p>Employs many workers Raiser expects to make profit.</p> <p>Chickens raised are predominantly 'foreign birds' (Agric)</p>	<p>1,000 or more chicken raised for business.</p> <p>Raiser has invested money and is unlikely to do anything else.</p> <p>Raiser keeps the chicken in battery cages and is responsible for their feeding, medication and care.</p> <p>Employs many workers Raiser expects to make profit.</p> <p>Chickens raised are predominantly 'foreign birds' (Agric)</p>

Communities in Lagos and Kano strongly believe that only rich, well-to-do and influential people in the community can afford to raise foreign breed for commercial purpose, employs low-income people to work for them and even can afford to give out birds as gifts to the poor to eat.

Table 4 shows that during the recent outbreak of AI affected many poultry farmers in rural and urban centers in Lagos and Kano. The household livelihood of backyard and commercial level, and egg sellers were particularly hit because poultry is their major source of income.

On the other hand, free range bird farmers who raise poultry for consumption in Lagos had to turn to other alternatives during the outbreak because they were not able to use /sell chickens for consumption or gifts.

At the outbreak of AI in the rural and urban communities of Lagos, both types of chickens (Agric and Local) were affected, but the worst hit and the most reported cases were the foreign breeds (Agric) because the population of it was quite higher than the local breeds. The death of local breeds was not reported in Lagos (rural and urban) because they did not perceive their deaths as a tragedy; rather they consider it to be an act of God. Culturally, the community people in the two States believe that once a local breed dies, its blood is an exchange for their own or their children's blood. They see chickens and other livestock in the household as a protection against evil wind, evil spirits, evil manifestations and particularly death. Death of local chickens or any other livestock at the household level is seen as substitution for a human death.

In contrast in Kano, most respondents indicated that the outbreak affected mainly agric chickens, the local breed chickens were not affected. The urban youth in Kano further clarified that the most affected among the Agric chickens were the layers.

The testimony in Box 5 is an illustration of local belief.

Box 5: Cultural interplay on death of chickens in the household instead of human death

A woman respondent in Iba (Lagos urban) reflected during the IDI "if my chickens die, I will quietly bury the chickens and give praise to the Lord because I know the chicken has died in my place or my children's place, somebody in my household has been saved from death.

The testimony in Box 5 further suggests that people perceive that if AI becomes widespread or pandemic and local chickens are wiped out, there will be a protective gap and people be more exposed to threat or fear of death.

Use of chickens

The trend and pattern of use is almost the same in the 2 states with slight variations in rural and urban settings coupled with religious diversity in the 2 states. The study revealed that the communities in the 2 states use chickens for:

- Consumption
- Sales
- Religious/cultural rites
- Gifts

The study in the two States revealed that affordability determined the frequency of chicken consumption both by the raisers and the general public. The majority of people report liking eating chicken and eggs. People in the rural Lagos are more able to afford chicken than in rural Kano. Women confirmed in both states (rural and urban) that local breeds are preferred for consumption because of their aroma and sweeter taste.

While most free-range chicken farmers in Lagos (rural and urban) raise them mainly for consumption and gifts than for sales, the majority of chicken farmers in Kano raise them for economic purposes and rarely consume them except during very important religious celebrations. Although there are no cultural or religious prohibitions on consumption of chickens, sometimes people are advised to avoid it on medical grounds. An example of this fact is included in Box 6.

Box 6: Perception of a low-income man of the economic value of chicken

How a chicken turned into a cow

A man from Gezawa (Jogana) bought a hen for his son at the price of N150 and it started laying eggs. When the hatched chicks matured, he sold five out of the total of six that reached maturity. He used the money to buy a goat for the boy. The goat gave birth to three kids. He sold two goat kids and used the money to buy a sheep which gave birth to one lamb while the goat gave birth to two kids. He sold the sheep, the lamb and the four goats and used the money to buy a calf which has grown into a cow.

Children in the urban and rural communities in Kano State also raise chickens that they received as gifts to try their hands on making money, thus suggesting that the economic values of chickens are not limited only to adults. Children use the proceeds generated from such sales to pay school fees, purchase clothes, purchase bicycles for going to school or to pay for other needs which may not be seen as necessities or priorities by their parents.

While middle and high-level income earners were comfortable to shift to other source of foods, such as cow meat. Because of the increased demand in cow meat, prices rose, and cow meat was no more affordable to low-income earners in Kano and Lagos. This confirms the fact that community people, once faced with reality of a threat to their life, will be ready to change eating habits to reduce the risk on their lives, except low-income people.

Consumption of dead chickens

Some people in rural communities in Lagos explained that they usually eat chicken that died of seasonal flu (*kooli*). This practice was stopped during the outbreak of AI. Some people indicated that they do not eat birds that died of an apparent disease (AI or not). They believe that what killed the chicken or made it sick could also affect human beings. The only dead birds they ate were free-flying birds that were killed with a gun or stones, commonly referred to as bush meat (*eran igbe*). However, some people ate dead chickens because of poverty.

The scenario is quite different with Muslim faithful in both States who revealed that their religion forbids eating of any dead animals or birds including chickens. Some traditionalists also confirmed that their gods forbid the consumption of dead birds.

Religious precepts determine certain eating behaviors. Proper sensitization and education of community people and poultry farmers on appropriate poultry practices and strict adherence to rules and regulations of poultry management will further prevent outbreak of AI and reduce the negative impact of it even if it becomes an epidemic.

Economic Factors and Expansion of AI in the Community

There are factors influencing poultry practices and norm compliance whether positive or negative. These include, but are not limited to: literacy level, financial capability, and availability of natural resources or infrastructures (water, light) etc. This section deals with these factors as they relate to the care and sale of poultry.

Care of poultry

The study revealed that poultry care is a common practice in both rural and urban settings in the 2 States, although the degree of care differs among the categories of poultry farmers. Poultry farmers in both States have different understandings of poultry management and their comprehension and practice of hygiene is a reflection of their level of literacy and knowledge of appropriate poultry practices.

Care provider

While the majority of rural and urban respondents in Kano and Lagos State were low-income level, the minority were middle or high-income level. The community people in Lagos and Kano (rural and urban) believe that the owner takes full responsibility of the chicken and all its needs: water, food and shelter. But in practice, particularly with free range birds and backyard poultry farmers, poultry care is perceived as the responsibility of women and children, which consisted of cleaning, sweeping and feeding. Because they are the heads of the household, men are exempt from poultry care, and they would not be respected by the community if they were to carry out these duties.

However, the in depth interviews revealed that for well-to-do people in both States, literates and semi-commercial poultry farmers, children are exempted from caring for poultry. They employ hired labour to care for the poultry.

While poultry care at the household level (free range birds and backyard poultry), in both rural and urban communities of the 2 States, are left to women and children, commercial poultry are taken care of by mostly male labour. Thus, there are an increased number of people who are exposed to chickens at the household level, thereby widening the chances of a widespread epidemic.

Types of care

All the respondents in the two states both rural and urban confirmed that there is seasonal variation in poultry caring. The community leaders in rural Kano stressed that people are more concerned and pay greater attention and care for the local chicken during the rainy and *harmattan* season (cold season December to January) than any other months in the year. In their view, this is a result of the susceptibility of the poultry to



Seasonal Calendar, Youth, Kano

diseases and infections as a result of the wet weather as well as the need for warmth during the cold season. Most chicken farmers in Kano sell their chickens off quickly during cold season to avoid massive losses.

Hygiene: Hand washing and general cleaning of poultry house

Participants observation revealed in the rural and urban communities of Lagos and Kano States, poultry farmers, regardless of the literacy level, have the general knowledge about poultry hygiene, but fall below standard when it comes to compliance (though at varying degrees in urban and rural areas). Non-compliance is more evident in rural than in urban communities. While poultry houses owned by elites⁴ have an acceptable level or state-of-the-art hygienic practices, there is a low level of or non-compliance with hygiene procedures among the illiterates and low-income poultry owners.

The level of poverty and lack of basic infrastructures also play major roles in hindering people from implementing preventive and control measures in both States. For example, in locations where water is not readily available and the user would have to pay for it or go far before getting it, it might not be easy to wash hands and generally tidy up after every procedure because the distance to the source and the cost of water would be considered at each use.



Hygiene in a commercial poultry farm, Lagos

On hand washing

The study revealed that compliance of hand-washing in the two states (rural and urban) is below standard. Participants' observation revealed hand washing before and after caring for the chicken is not a usual practice among the majority of the different categories of farmers. Workers in some poultry farms observed in Lagos rural said they only took baths after all farm activities have been concluded in the evening.

The low level of hygiene practices was so widespread that even those who are expected to show examples of best practices did not do so in rural and urban areas in Lagos. For example, observation of semi-commercial poultry farmer revealed that he did not wear shoes while feeding the birds and he did not wash

⁴ Educated + social status + wealth + exposure + political power

his hands before feeding them. Observation of a Vet Doctor in Lagos urban shows that he was as careless and dirty as the illiterate farmers. (Illustrated in Box 7)

Box 7: Hand washing & hygiene practices at a veterinary doctor's farm in Iba (Lagos Urban)

By the entrance of the poultry house is a functioning tap. This is the source of water supply to the poultry house.

The children of the raiser who entered the poultry house did not wash their hands before entering, nor did they wash their hands and feet at the exit.

Their mother rationalized that her daughter who entered only went in to drive out turkey which is closed to the door of the poultry house. The woman also said that the girl will take off her shoes before entering into their home.

The raiser said that his son did not wash his hands before going in because he went to pick a dead chicken and will definitely wash his hands with soap and water. According to her, hand washing after attending (touching) the chickens is a procedure to be observed. (*participants observation*)

Box 8: Interface of hand washing and Child Health in Iba (Lagos urban)

There was no basin for hand and leg washing in the poultry house. The woman (wife of the poultry owner) was met caring for the chickens. During the cleaning exercise she was wearing slippers but when her baby was crying, she carried the baby (she did not wash her hands), she breastfed the baby and continue with the cleaning exercise. (*participants observation*)

Hand-washing compliance is zero among the owners of free-range chickens in Lagos and Kano. They do not wash hands before or after feeding their chickens. They do not attach any importance to it.

When it comes to general cleaning of the poultry houses, poultry farmers in both rural and urban sites of the two States revealed that minimum care is being given to the free-range birds. The raiser releases them in the morning and they return on their own in the evening to roost. Lagos farmers with more than 20 chickens clean the cages with soap and water daily, and sometimes when they suspect the presence of a parasite which they call 'Yoro', they use antiseptic to clean the cages while some of their counterparts in Kano cleans the cages on a daily basis.

Box 9: Participant observation of a backyard poultry farmer (Lagos urban) on poultry cleaning procedure

A backyard poultry raiser in Iba (Lagos urban) who has about 35 local breeds but keeps them in cage at night was observed during participant observation and exhibited a very poor level of hygiene. He used two flat pieces of metal (one in each hand) to scrape and pack chicken droppings everyday. He does not wash the cage with soap and water because he believes scraping and packing is hygienic enough. He also said that the cage could attract flies and may not dry quickly if he cleans it with water. He said that if he does not clean the cage, the chickens will not go in to sleep.

Box 10: Participant observation of a semi-commercial poultry farmer (Lagos urban) on poultry cleaning procedure

An exceptional case was a semi-commercial poultry owner in the same community (Iba) who owns about 1,200 birds exhibited impressive hygienic practices. In his case, each of the 2 people who take care of the birds has a special set of shoes and set of clothes which they wear anytime they work inside the poultry house.

In both States (rural and urban), the size of the poultry and level of education and business orientation of the farmers seem to play a key role in the level of care and hygiene practice in the farm.

Medication and medical consultation

Medication and medical consultation practices are different in rural and urban communities in both States. These practices seem to be influenced by literacy level and exposure.

The level of knowledge and degree of compliance with medication among poultry owners in the rural communities of the 2 sites (Lagos and Kano) is below average though there are slight variations among farmers. They all have the same knowledge on protocols of medication for poultry birds like giving drugs, booster or injection, but frequently they cut corners to save cost.

On consultation with veterinary doctors, the majority of the urban poultry owners spoken to in Lagos and Kano confirmed that their first point of call in any emergency is the Vet Doctor. The informed poultry owners and those who regularly consult Vet Doctors confirmed that they do observe the behaviour of their birds on

a regular basis to determine whether there are any unusual developments. If so, they typically, report to the Vet Doctor promptly.

The situation is different among the rural farmers in the 2 States. Most rural poultry farmers spoken to in the 2 states confirmed that they do not retain the service of Vet doctors but only contact them when they think they need their assistance. Rural farmers stated that they attend to birds only occasionally because of many other things that require their attention.

The only medication used in households that keep free-range birds in rural and urban communities of Lagos and Kano State is tetracycline, M&B, paracetamol, and hot pepper to sick birds prepared by women and applied by older children who use their discretion on the dosage given to the chickens.

Management of poultry

Poultry management in rural and urban communities of Lagos and Kano States are very similar with very slight variations.

Transportation of poultry

Foreign chicks for breeding are brought in the months of January, May and October when the weather is cold and there is less chances of infection while the local breed raised by backyard raisers are brought in throughout the year. The number bought in January is usually high because chickens are sold out typically between October and December to meet the high demand because of various festivals celebrated during that period. (September: Masquerade festival; October: Eid-el-fitri; December: Christmas).

Some of the poultry farmers spoken to in Lagos rural & urban showed the plastic cage they use for packing birds in and out of the poultry. They confirmed that the cages are safe because they protect birds from direct heat of sun and permit cross ventilation. The transportation of day-old chicks or any type of bird in both communities is done early in the morning to reduce stress for both short and long distance. The cases are packed in a pick-up truck or any other suitable vehicle that allows cross ventilation and then covered with polythene to protect the birds from rain.

The study in the two States however revealed that backyard poultry farmers purchase chickens from various hatcheries, thereby mixing breeds which further provides a good atmosphere for spread of AI, because viruses can easily be transferred from chickens in an affected farm to chickens sourced from an unaffected farm.

Handling of chicken droppings

There is a sharp difference in handling of chicken droppings in rural and urban communities of Lagos and Kano. Poultry farmers in the urban settings tend to be more careful and observant the safe practices in the disposal of chicken droppings than their counterparts in the rural area. Most farmers pack and remove droppings from their farms though the frequency of removal differs across farms. The droppings are removed weekly, fortnightly or monthly depending on size of the farm/flock.

Poultry farmers in rural areas are more carefree with their chickens' droppings which in most cases are not handled hygienically. Some poultry farms are littered with chicken droppings and smell awful. A common practice among this group is packing of the droppings into any nearby swamp or bushes.



Commercial Poultry Farm, Lagos

dig holes to bury the dead chickens to prevent bad odour. Some respondents admitted that they give dead birds to children who are responsible for dumping family wastes on dumpsite.

Handling of dead birds

Poultry farmers in the two States before AI outbreak dug holes and buried dead chickens, a practice which they continued during the outbreak, although as explained before, some food insecure people took advantage of the situation to even sell dead birds that were already cooked or roasted.

The practice among free-range chicken farmers in the two States is the disposal of dead birds by older children or women into the bush or

Sales of poultry during recent outbreak of AI

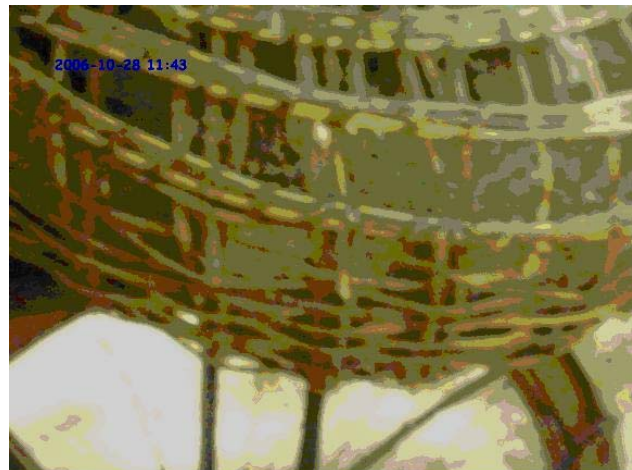
Economically, Lagos and Kano are very big markets for chickens and eggs and raising serves as a major source of income for so many households in both the rural and urban settings, as well as the exportation to neighboring countries. The majority of egg sellers in Badagry take their eggs to the Republic of Benin border to sell.

Commercial poultry farmers sell their poultry products on a wholesale basis to the various retailers (chickens and egg sellers) who sell them in different markets in Lagos and Kano for use/consumption at the household level.

Professional poultry farmers in the two states (rural and urban) report selling chickens and eggs all year around, while chicken sellers who operate from markets stalls sell local and foreign breeds of chickens everyday, but with a particular sales increase at festive seasons.

In terms of gender participation in the retailing of chickens in the market, while women are more predominant in the sale of chicken in the rural and urban communities in Lagos, men are more typical in Kano.

The major source of eggs sold in both Lagos and Kano is foreign breeds, which frequently come from big backyard poultry farmers and commercial poultry farmers. Eggs from local breed chickens are not commonly sold in the markets because they are very small in number and are frequently reserved for hatching by the mother hen or at times consumed at the household level.



Jogo basket for transporting chicken on bicycles to the market, Kano

Some poultry farmers who were worst hit in rural Lagos could neither change trades nor bounce back after the AI saga broke out. They went down and out completely.

Relationship and connections with cultural factors and expansion of AI in the community

Chickens have important cultural significance in rural and urban communities of both Lagos and Kano States. While only local chickens are the acceptable breed

for cultural rites in both the rural and urban communities of Lagos State, Kano State does not have any prohibition for any breed for religious and cultural rites.

Besides the general religious use of chicken during festivals like Easter, Christmas, Eid-el-Fitri, Sallah etc, Table 5 below explains the other cultural and religious usage of chicken in the two States.

Table 5: Use of chicken in religious and cultural rites in Lagos and Kano (rural and urban)

LAGOS		KANO
Ajara Topa (rural community)	Iba (urban community)	Rural community
<p>Marriage Rites: Ducks are used as part of marriage rites where 2-3 ducks are given to the father of the bride. One goes to the father of the bride, one for the siblings and the third for sale or consumption.</p>	<p>‘Oro’ sacrifice to masquerades; This is done in with everyone in the community by everybody for 7 days., for seven days people looking for children, prosperity and healing from illness would slaughter chickens. The slaughtering method depends on the individual and the requirement of the gods.</p>	<p>Marriage Rites: A whole chicken provided by the bridegroom is roasted or fried for the bride to be eaten by her alone. This is given on the night of the marriage and may be provided for the first few nights after marriage.</p> <p>The bridegroom also provides several chickens to be cooked as a whole, not cut into pieces, placed in a pot and presented to the bride’s parents.</p>
<p>Burials: Poultry products are also used in burial rites in front of the coffin to appease the dead. (‘adie irana’)</p>	<p>Burials: Chicken is used as ‘adie irana,’ for which the chicken is used as the last honor for the dead. Depending on sex, the feathers of the live chicken will be removed until the corpse gets to the grave. But bird will not be killed, the person who was responsible for removing the feather during the burial procession will later raise the bird.</p>	<p>Ramadan: Culturally, people consume more eggs during Ramadan period than any other time of the year.</p>
<p>Funerals: Chickens are used during funeral ceremony, all the</p>	<p>‘Ere Ibeji’ (idol of twins) – Two chickens are used depending on the sex of the</p>	<p>Circumcision celebration: Chickens are cooked for boys at</p>

LAGOS		KANO
Ajara Topa (rural community)	Iba (urban community)	Rural community
grandchildren of a dead man or woman will be compelled to buy one chicken each during the burial ceremony but they (the grandchildren) must not eat from it. It must be cooked and shared out to visitors alone. Pigs are killed for final burial rites.	twin, killed for the idol, the chickens are fried and distributed to people.	their circumcision, which is usually done at the age of 7. The belief is that the wounds will heal quickly once the boy is given chicken meat to eat during the healing period.
Sacrifices: Chickens and eggs are used in appeasing gods and for sacrifices, to redeem life or prevent evil occurrences in the community.	'Ogun' (God of iron) – Chickens are slaughtered; the wing, leg and some feathers are placed on iron for the sacrifice.	
Other Sacrifices: Chickens and eggs are used to appease gods whenever demanded. This could be done anytime during the year.	'Idol of Ancestors' – The ancestors of a family; one of the chiefs spoken to during IDI confirmed that he uses chickens to make sacrifices to his ancestors.	
	Other Sacrifices: Chickens and eggs are used to appease gods whenever demanded. This could be done anytime during the year.	

The information in Table 5 illustrates different cultural rites in which chickens are used in both the rural and urban communities of Lagos and Kano States. Since chickens have strong cultural meanings, as shown in Table 5 in both Lagos and Kano States, if AI becomes widespread or pandemic, it will pose a great threat to meeting cultural and religious obligations in the communities and thereby creating a sense of un-fulfillment for religious and cultural faithful (s) in meeting the needs of worshipping their gods.

Box 11: Contribution of a woman traditionalist in Iba (Lagos Urban) & the reaction of the King of Iba

A woman (traditionalist) during IDI in Iba (Lagos urban) revealed that their gods will not accept any other thing but local chickens. There is, however, an exemption to this because the King of the same Iba (Lagos urban) during the IDI, when faced with pandemic situations of AI backed out from the traditionalist opinion and confirmed that the idols worshipper will have to look for another alternative to chickens for worshipping the gods if chickens becomes wiped out, thus confirming the community people's readiness or flexibility for change

Chickens, whether local or foreign breeds are given out as gifts by owners in both the rural and urban communities of Lagos and Kano States during festive seasons as a sign of love to their friends and families though there seems to be a cultural undertone of who has the authority to give chickens out as gift in a household, a practice which favors men being the head of the family.

While the foreign breed chickens are kept in cages or a deep litter system, the local variety is usually raised as free-range. Free range birds relate with people very freely, they can be seen almost everywhere in the community, in the shops, in dirty gutters, picking food from dirty bins, picking rice and other left over food at food sellers shops in the same plate that people eat from.



Participant observation, adherence to hygiene, commercial poultry farm, Lagos

They also relate with every other household animals like goats, rams, sheep, ducks, pigeons etc while out of the household, they can be seen in small bushes where free-flying birds perch to scavenge for foods thus creating an opportunity for infections. Generally, community people do not see anything wrong in allowing chickens to interact with them so freely.

Box 12: Interface of socio-cultural & economic factors & expansion of AI in Iba community (Lagos urban)

During participants' observation, the researchers talked with a backyard poultry raiser of over 300 birds and 17 matured turkeys in Iba, Lagos, urban. The owner is an educated woman, who started the farm 2 years ago. The poultry is located inside a big compound, which also houses a fish pond and dog cages, all belonging to her.

This poultry raiser sources her day-old chicks from Obasanjo farm in Otta, Ogun state, because she considers farm more organized even though it is a bit far from Iba. She uses a deep litter type of poultry house which is built permanently in front of her house in form of a shed with a cemented floor covered with sawdust. She said ordinarily she would have preferred the original iron cage, but she could not afford it because it is expensive. This highlights the fact that some poultry raisers, though conversant with poultry norms, may be limited by availability of funds.

She has restricted the number of people entering into the poultry to only 2 people, she and her only staff are the 2 people that have access to the poultry. Her children that live in the same house are not allowed to enter nor are outsiders. She said the reason for this when asked is that the birds are so sensitive to anything strange to their system.

The literacy level of poultry farmers in both Lagos and Kano States is a chief factor affecting the handling of the poultry and adherence to rules and regulations related to hygiene. Limitations or reduction in interaction of humans and chickens depends largely on the level of literacy, awareness, experience and exposure of the raiser. A few examples can be seen below of the obvious gaps and lapses that are common among many farmers as discovered during the study.

Box 13: Interface of socio-cultural & economic factors & expansion of AI in Iba Community (Lagos urban)

The raiser who lives in a 3 bedroom apartment has 2 sets of birds namely: layers (at point of lay) and young broilers. The raiser packed the layers (about 100) in a bedroom converted to deep litter system. The room was stuffy, congested and smelly. The poultry raiser, his wife and 2 children were the care giver; this implies that every members of his household always interact with the birds.

The heat from the poultry room could be felt in the whole house. He does not allow strangers into the room and the birds are restricted from going out of the room.

The two cases listed above show a sharp distinction in practices and methods between the poultry owners who are educated and enlightened person and those who are illiterate or an uninformed community person.

It is noted from the reports from the rural and urban communities of the 2 States that there is a high level of interaction between free-range (as they move about), small scale (free movement in and out of their enclosures) and even the large scale – restricted birds (free interaction of people and even wild birds). The level of interaction of foreign breeds (usually kept in cages or enclosures) with humans is lower than that of the free range birds.



Free range chicken, Lagos

The high level of interaction between chickens and their immediate environment, particularly in the case of free range birds and backyard poultry, demonstrate that if AI becomes widespread or pandemic it will promote easy transmission and increase spread within the shortest possible time.

This means that at the outbreak of AI the poultry farmer in Box 14 will be worst hit and if it becomes widespread or pandemic, his entire household will be in great danger while he also poses a greater threat to other households in his neighbourhood or whoever comes in contact with members of his household.

Facilitators and barriers to mobilization of resources or changes in practices to prevent AI or reduce the negative impact of an outbreak

Triangulating the information gathered with the PAR tools revealed that many factors and practices can facilitate or act as barriers to the prevention of AI and to the significant reduction of its negative impact during and after an outbreak.

Chicken and human interaction

A very free interaction that exists between chickens and family members in households in rural and urban sites of the 2 States is a facilitator to spread of AI during any outbreak. Considering the high level of interaction, the community people have come to accept chickens as part of the household and many found it very threatening to separate them from the household.

Decision on chicken disposition and use

In a scenario where it becomes necessary to separate chickens from the household completely, the head of the family's consent becomes very important since the final decision on chicken disposition or use is usually made by the head of the household.

Economics and care and management of chicken

For most people in the community and irrespective of the level of education, chickens are a source of income, and for poultry farmers, chickens are almost the only source of income. The passion of poultry farmers for their birds at times is so strong that their reactions when faced with mortality on their farms prove that poultry are "their life." The attention given to chickens further proves that the well-being of chickens is of prime importance to backyard and commercial poultry farmers

Thus, if poultry farmers are properly mobilized, empowered to conform to appropriate poultry standards and strict adherence to poultry practice rules and regulations (hand-washing, regular medication, clean environment, transportation of birds, waste and dead birds disposal, etc), they will cooperate knowing fully well that their investment in the business is worth every sacrifice they need to put into it to ensure good profit and minimize incidentals – mortality.

This, if successfully done, will definitely ensure that poultry will be able to withstand infection threats and, if AI eventually breaks out, will reduce the negative impact and prevent spread.

Cultural

There is a strong cultural and religious attachment to chickens (local in the South; local or foreign in the North) which can pose some challenge to control and containment of AI.

This ranges from reporting strange cases or the death of birds to using chickens as sacrifices to gods. It sounded threatening each time the probable case of widespread or pandemic AI is mentioned in the community, the traditionalists displayed a big resistance to letting go of chickens, claiming that their gods may not want to take anything else besides chickens. Most people feel that they have the obligation to perform the rites, even if the risk of being infected by handling sick chickens is real.

The attachment is so strong that they feel that removing chickens from the household is removing a protective wall around their family thus exposing them to evil occurrence or even death. This poses a major challenge to prevention or reduction of negative impact of AI.

There are some limiting factors which can frustrate the efforts of mobilized community resources; humans and materials in the efforts to prevent or reduce the negative impacts of AI. These limitations include lack of deeper/accurate knowledge, appropriate skills, and access to sufficient resources.



Women group matrix ranking, Kano

Access to resources

Community resources as identified during the study in the two States includes but are not limited to human resources. Community members both in the rural and urban sites confirmed their willingness to volunteer themselves for empowerment through capacity building to improve their knowledge on poultry farming which will change negative attitudes and improve practices. They would become well-equipped to prevent AI and well-prepared prepared in any event of outbreak to control and reduce the negative impact.

While people's availability/disposition/willingness is a strength and a facilitator, there are some barriers in the community that can frustrate their effort. Some of them are lack of willingness on the side of the government to consider them a useful partner, non-availability of trainers, and other frustrations that may set in either by logistical problems or non-commitment of government to measure up to expectations that is normally expected in such partnership.

Other barriers to change in practice are lack of basic infrastructure in the community, e.g. water, which is mostly needed for hand-washing in the poultry; provision of dumpsite by the government especially in the urban areas.

EXISTING COMMUNICATION RESOURCES THAT CAN BE MOBILIZED AND THE FEASIBLE INTERVENTIONS FOR LOCAL RESPONSES

This section deals with the type, nature of, sources of, reaction to and reliability of sources of information to the community on Avian Influenza. It will also cover the actions that were taken at different levels to prevent the spread of AI and mitigate its impact as well as what support the communities expect from different sources.

Information on AI – Type, Availability And Sources

Availability of information on Avian Influenza in the community

The study revealed that information was available to a certain extent to some members of the community on AI, but the amount was different in urban and rural communities. Urban communities had more information in view of the fact that they had wider access to the sources of information. However, all the categories of respondents indicated that they started getting information long after the outbreak of AI. The first indication of access to information on AI can be traced to announcements that were aired in the month of February 2006.

Type of information on Avian Influenza

The flow of information to the communities started later than expected by community members. Early February, people were informed of known areas of AI infections with specific reference to farm settlements in urban Lagos and other large scale farms in urban Kano and all the rural communities. According to some Lagos rural community members, they also learned that large commercial farmers have sustained greater losses than free range farmers. They were also able to get information on how they should react by avoiding the consumption of chicken and other poultry products.

People spoken to, reported being scared by the first set of radio announcements on AI, even though, nobody recalled the exact message heard over the radio. Subsequent announcements minimized the threat and encouraged the consumption of chicken, an example of which was announced, "...wash chicken thoroughly, boil for a long time, fry very well before eating" as reported by poultry farmers in both Lagos and Kano sites. These later announcements brought a welcome relief to the community and some people resumed eating chicken and eggs.

Part of the content of the IEC materials provided to the Lagos urban community by an International NGO include the following:

COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

- Keep children away from sick or dead fowls and other birds
- Always wash your hands with soap and water after touching any fowls, chicken, eggs or birds.
- Do not slaughter, eat or use sick or already dead fowls or birds.
- Report cases of sick or dead fowls or birds to the nearest authorities in your community.
- Do not use fowls or birds droppings for manure.
- Seek immediate medical treatment if you fall sick after contact with dead or sick fowls or birds.

Sources of information on Avian Influenza

The nature of settlement, gender and age of the respondents appear to play a key role in the type or source of information that people received. The most common sources of information on AI in both states and across the urban and rural communities was the radio, television, and word of mouth which were mentioned by individuals in all the four sites. It was indicated by both Kano and Lagos urban areas that they got their information from federal/state government through the radio, TV, Newspapers and NGOs. A group of poultry farmers in urban Lagos (Iba)

mentioned that they did not receive much information from NGOs at the beginning of the outbreak. This situation changed at a later date with the efforts of the Japanese International Cooperation Agency (JICA), who later provided pamphlets, handbills, posters, booklets and other IEC materials. However, rural women did not mention radio as their source of information. Some of the Lagos rural respondents indicated that they received information from more experienced poultry farmers who have been in the profession for a long period.

Young people also indicated listening to news on international radio, such as the BBC (Kano urban). The respondents in all the four sites confirmed that word of



Youth group, force field analysis, Kano

mouth was the significant source of information during the AI outbreak. During the study, people kept referring to snippets of information which could not be substantiated and could have been generated through word of mouth.

Public places also serve as sources of information to the communities, including schools (adult education or religious education), mosques, churches, markets, wedding and other ceremonies (particularly for women) Others are public lectures and presentations, community meetings, and professional associations meetings.

Reaction to Information on AI

Reactions of communities, individuals and families

Most communities panicked when they first received information on AI. Most people questioned the authenticity of the information. A group of Kano urban young people said that when they heard of it, they thought it was an effort by rich people to prevent “poor people” from raising chickens, which are their source of ready income. They also thought about a conspiracy by the government to manipulate poultry production and stop poultry production in Northern Nigeria. A group of young people in Lagos, urban also said that AI was a conspiracy from the government to prevent Southern Nigeria from producing poultry. AI became a major point of discussion at different forum with people looking for any information that will reveal what the outbreak is, how extensive it is, and whether it affects their lives directly and immediately. Women indicated that it was even discussed in hospitals and health centers in both rural and urban Kano. It occupied their attention for some time.

Reactions of NGOs, civil society organizations, and professional organizations

Respondents in urban Lagos indicated that the only IEC materials they received were from an NGO's publication on AI. They explained that the Poultry Farmers' Association of Nigeria (POFAN) was prominent in the effort of raising awareness of AI in people. POFAN started a sensitization drive that extended the available information to ordinary people. This effort involved conduct of awareness outreach in the different communities of the sites and the production of IEC material as was indicated in rural and urban Lagos (complementing the efforts of JICA in Iba - Lagos urban). The government (local, state and federal levels) at the initial stage of the outbreak was not very active in creating awareness at the community level until professional and trade groups bombarded them with requests for clarifications on the issue of AI.

Furthermore, POFAN embarked on awareness campaigns across the country covering both Lagos and Kano states to disseminate accurate and timely information to other people and groups. POFAN also informed the public on appropriate preventive measures that should be taken. They include the following:

- Bury dead and affected birds
- Verify and be sure that wherever you are buying chicken should be an AI-free area
- Don't allow strangers into your farm
- Prevent your birds from wild bird intruder
- Separate old birds from the new chickens
- Proper cooking and sanitation
- Washing hands before and after handling chickens

At the awareness campaign, the team also killed chicken, cooked/fried/roasted and ate the meat in the presence of people to convince them that chicken is safe for eating when it is well cooked. This act in the 2 sites in Lagos convinced some people leading to an increase in sales of disinfectants and increase in sales of poultry products which had before then been in a downward trend. Being a national association, these efforts were rolled out all over the country but especially in Lagos and Kano where epidemic was more pronounced.



Venn Diagram, Kano

These associations also called on people to report incidences of AI to the authorities in order to enable speedy response. Reporting was however not very common and in some cases the people refused to report it because they were not sure what will be done in response to that or if they could be penalized through some form of ban or something else. Some of the respondents in both Kano and Lagos also mentioned that they already felt that the death of their birds (all types of chicken in Kano but local chicken only in Lagos) might be a divine intervention

which diverted a calamity on to the birds that might have befallen them directly. Other felt that chickens are their personal property as such they do not have to report their deaths to anyone least of all the government.

Reliable, Trusted and Effective Sources of Information in the Community

Identified sources of information

Both rural and urban communities in Lagos and Kano identified radio as a source of information as well as, community leaders, religious, traditional leaders, and government agents/officials. Urban participants in both Kano and Lagos also identified TVs, newspapers, and professional groups. Rural communities in both states also mentioned public gatherings such as ceremonies, religious activities and town meetings, whereas rural and urban women in Kano mentioned health centers, hospitals and other public gatherings. Urban youths in Kano also mentioned international news sources such as the BBC and other satellite and wireless sources.

The poultry farmers in both Lagos and Kano urban communities identified Veterinary Doctors and experienced poultry farmers as a good source of information on issues relating to birds and other animals. Other sources identified in urban Kano are extension service organizations, veterinary clinics (private and public), hospitals and primary health care services, especially in relation to information on birds, other animals and general farming.

Access to and availability of the sources of information

All of the communities identified sources that are closest to them when talking about sources of information. Urban communities mentioned sources that are more urban such as TVs, newspapers, community development associations (CDA), community leaders, religious institutions, government officials, professional associations, extension service centers, international media, vet doctors, vet clinics and vet hospitals (both private and public – usually more common in urban areas), satellite sources etc. Rural communities in both Kano and Lagos on the other hand mentioned sources that are more accessible to them which include radio, community leaders, clergy persons, public occasions, and experienced poultry farmers. Therefore, not all sources are available in all communities or accessible to every respondent, with the exception of the radio, which was mentioned by all types of respondents and across all communities that were studied.

Reliability and integrity of sources of information

The radio stands out as the most reliable and dependable in both rural and urban Lagos and Kano. It was also mentioned by all categories of respondents, though less by women in both Kano and Lagos. All the four communities in Lagos and Kano indicated the significance of community leaders including traditional and religious leaders as very reliable. Female respondents in urban Kano also mentioned that when talking about information on birds, vet doctors are the most reliable source because of their professional knowledge to the issue. In fact, a poultry farmer in urban Kano called on the government to make use of the vet doctors who can easily pass vital information to the people. Another reliable source are the poultry farmers, as indicated by both urban Lagos and Kano who also mentioned health officials who are adequately informed of most ailments, their causes and how they can be treated.



Causal flow diagram, women, Kano

All categories of respondents in both Lagos and Kano indicated that most people accept and believe the information that is passed to them by their religious, community and traditional leaders because of their close contact with the people, the dependence of their communities on them for guidance and their long history of providing reliable information to their communities. Furthermore, there is a general belief that these leaders usually represent the interest of the people and are closer to the government thus able to have access to detailed and accurate information.

Other sources mentioned in both Kano and Lagos are community meetings where issues are discussed and information provided. These usually hold in town halls (Lagos urban and rural) or in Islamic and modern school halls (Kano urban) or in the house of traditional leaders (Kano and Lagos rural). The people gather in these places for public meetings, training and public awareness. Youth and educated people from the Lagos urban community mentioned the role that youth and development associations play in information dissemination.

Action taken to prevent the spread and mitigate the impact of AI

This section deals with the actions taken by community members to prevent the spread of AI. This information was collected during focus group discussions and interviews with men, women, and youth in both States.

Actions taken by communities

The communities including individuals and their families reacted as soon as they heard the first announcements on AI through the media. Some of the immediate actions taken by communities include specific actions taken by individuals, families and households stopped eating poultry products including eggs and chicken. Those that stopped eating poultry products shifted to eating fish and beef while those who are not used to eating chicken before the outbreak were not affected by chicken and egg scarcity.



Restitution meeting, Kano

Poultry farmers in rural Kano and Lagos opted to traditional remedies at the onset of the epidemic as well as offering prayers for the control of AI. There is no evidence that these medications have worked and the severe losses that were experienced by poultry farmers clearly show the lack of efficacy of these methods. However, they did not stop there, they did some self medication by giving the birds antibiotic capsules (though the affected birds later died and they were properly disposed of and the saw dust in the poultry houses were packed and burnt before buying new stock of chicken to rear).

Some poultry farmers in the 4 sites for fear of huge financial losses emptied their poultry farms through consumption, sale and gift to friends and relatives. Birds were sold at give away prices of \$1 to \$1.5 and in Kano it got to a point when poultry sellers were willing to give away birds free of charge according to some urban youths in order to avoid seeing them die in cages in the market.

Actions to be undertaken to fight AI

The information presented is from the causal flow diagramming exercises with communities in both states. The causal flow diagramming exercise provided information on the causes and effects of AI and the actions to be undertaken by communities to prevent AI and to mitigate its impact.

During the development of the AI action plan, communities listed the actions to be undertaken in their communities. The actions listed included the following:

- Community mobilization – awareness creation
- Education of the general population
- Community surveillance
- Prayers
- Training of poultry farmers
- Build the capacity of service providers such as extension agent and vet.
- Promote and reinforce observance of hygienic measures
- Training communities on proper way to raising chicken

Table 6 and 7 show examples of actions to be undertaken to prevent AI and mitigate its impact in Lagos and Kano

Table 6: Proposed actions to fight AI in Jogana, Kano

#	Actions	Men	Women	Youth
1	Create awareness through workshops	X		
2	Provide free medical care to infected birds	X		
3	Educate the community through trainings		X	
4	Promote observance of hygienic practices		X	
5	Train community members on proper ways of raising chicken through Vat. And agric extension agents			X
6	Motivate Veterinary doctors and agric officers to do their Jobs properly.			X

Table 7: Actions to be undertaken by communities to fight AI in Badagri, Lagos

#	Proposed actions	Responsible		
		Traditional leaders	Religious leaders	Community leaders
1	Community mobilization/awareness on proper hygiene practices both at the poultry and at the household level	X		X
2	Educate, encourage/advise people to stop consumption of sick and dead birds.	X	X	X
3	Prayers		X	
4	Proper cleaning of poultry farms and environment	X		X
5	Create awareness on proper burying of dead birds.	X	X	X
6	Community monitoring: Community watch/policing of poultry raisers to ensure proper hygiene practices are adhered to	X		X

Community resources

Human resources and community facilities were listed by participants in the study as available community resources to be used to fight AI in the community. Community human resources included community leaders and volunteers. Community facilities included public places such as schools (adult education or religious education), mosques, churches, markets, wedding and other ceremonies (particularly for women). Community members spoken with reported to be ready to volunteer their time to participate in meetings and to engage into actions to prevent AI.

Support for the implementation of community action plans to fight AI

After the development of community action plans to fight AI in each of the four sites, force field analysis exercise was used to help community members explore the factors that could constrain or facilitate the implementation of the community action plan. The constraints identified include the following:

- Out-of-date legislations related to, sanitary conditions, hygiene practices relating to poultry rearing and handling with a view to making them more relevant and functional.
- Lack of vaccines for the prevention of AI
- Limited knowledge and skills on how to prevent AI, conduct surveillance and keep accurate record of AI cases.
- Insufficient funds to carry out all the activities planned.

WIDESPREAD AI (FGD, IDI)

All the four sites expressed fear and concern for the possibility of widespread. According to a group in rural Lagos, such an eventuality will bring gloom to the entire community reflected in the panic and sadness resulting from loss of money, energy, time and possibly lives. Women in both rural and urban communities of Kano and Lagos said that they will be terrified; there will be great fear of death since the disease can affect humans. All the people involved in the study in Kano believed that a widespread AI will cause untold devastation on poultry, income, agricultural activities, health and even the lives of those in the community. These people have a high risk perception. Both rural and urban respondents in Lagos and Kano remembered/discussed how their communities lost so much income and chickens during the recent outbreak of AI. Poultry farmers in the Kano urban communities were also concerned with the possibility of chickens being blacklisted and abandoned as a source of meat.

Some of the suggested interventions that could be undertaken on widespread AI from both Lagos and Kano include sensitization and education, culling and compensation, and surveillance and reporting.

Sensitization and education of community members on all the aspects of AI that is relevant to their life. The participants in the PAR exercises listed the following messages:

- Educate people about the disease through intensive sensitization and information dissemination,
- Encourage poultry raisers to improve hygiene in their farms and ensure that they have access to proper medication’.
- Minimize interactions between poultry and community members.

- Kill, bury or burn all infected birds. Apply proper medication to those that have not yet been infected.
- Restrict movement of chicken.
- Carry out intensive sensitization and information dissemination about the disease.
- Provide vaccines to all poultry raisers and households to ensure that chickens that have not been infected can be saved.
- Prevent wild birds, and other wild animals from invading the poultry farm thus reducing the risk of spreading the infection.
- Separate different species of poultry in poultry farms that comprise ducks, geese, chickens, pigeons etc.
- Stop movement or transportation of poultry birds from one area to the other to avoid transmission of the disease.
- Minimize movements in and out of poultries to reduce the spreading of infection.
- Maintain high levels of hygiene in all poultries and other outlets. These should include:
 - The workers should always wash their hands and legs with soap and water before and after handling chickens.
 - Workers should always wear slippers and change their dresses in the store room after each section of activities in the poultry house.
 - The droppings should be packed twice a week and buried.
 - Poultry environment should be swept everyday; the grasses should be cut low.
 - Food and water troughs should always be clean and neat; and
 - Ensure that poultry feeds are purchased from AI free feed mills.

Motivation factors will include the protection of household livelihood, and human lives.

Culling and compensation

- Set up a buffer zone where all the birds within the zone should be culled to prevent the virus from crossing from one location to another.
- Adequately compensate the farmers for the destroyed or buried birds
- Involve experts and other professional as well as the appropriate media in all control and mitigation efforts.

Surveillance – monitoring and reporting

If AI becomes widespread then surveillance mechanism must be put in place so that all cases are reported on a timely basis. In addition, it was suggested that:

- Communities should be mobilized to form surveillance and monitoring committees.
- Monitoring progress report should be kept in order to maintain and check for sick and dead chicken in the farms.

PANDEMIC AI (FGD & IDI)

The pandemic scenario was also discussed with all categories of respondents, though their reaction was more of prayers against the possibility especially in the rural community. Being strongly religious, all the four communities quickly offered prayers calling for the prevention of a pandemic when the issue was raised with them. They all seemed to have the confidence that God will keep them safe from such a possibility. They were reluctant to come to grips with a possible pandemic and the devastation that is likely to follow. The paramount ruler in Iba the Lagos urban community equally expressed fear at the mention of an AI pandemic. He said they will contact the spiritual leaders to consult the gods for a way out. He believes that they can prevent pandemic AI through rituals. Pandemic AI was perceived as a disastrous calamity that a human being is not able to fight using natural methods. The magnitude of such calamity requires divine intervention.

Some of the suggestions made to handle, control and reduce the impact of an AI Pandemic include actions to be undertaken by households and communities.

Actions to be undertaken by households

- Family members should be taken for vaccinations, if there is any.
- Ensure that movements of people (especially children) are reduced to the barest minimum.
- Educate children and even adults on the dangers of the infections.

Actions to be undertaken by communities:

- Infected people should be quarantined.
- Then, as a last resort, people indicated that they would leave the community with their children to where the pandemic has not affected.
- Pray for God's protection on their children and entrust their lives into God's hands

IMPLICATIONS OF AI FOR COMMUNICATION INTERVENTIONS: LESSONS LEARNED

The information generated from the PAR with rural and urban communities in Lagos and Kano States shed some light on community perceptions and actions undertaken to prevent the expansion of AI and to minimize its negative impacts. PAR generated important lessons that should be taken into consideration for the development of any future communication interventions to contain and control AI and minimize its impact at household and community levels.

The findings of the PAR in both States helped identify individuals and groups of people who should be targeted for any future communication interventions at the community level.

PRIORITY TARGET AUDIENCES

The PAR findings helped identify individuals and group of people, who play important roles in poultry management/rearing and sales or in the dissemination of information related to poultry and AI in the community. Individuals and groups of

people listed in Table 8 constitute the target audiences to be reached out with communication interventions in relation to AI.

Table 8: Priority target audiences for communication interventions

Individuals and groups	Role in relation to AI	Implication for communication interventions
Men	Decision making as regards to use of poultry	<ul style="list-style-type: none"> • To be reached through men groups at community level • To be educated on AI • To be trained and encouraged to educate household members, ensure compliance to prevention measures at household level • To be encouraged to comply with culling during outbreak and widespread AI • To be tasked to report chicken deaths due to AI
Women	Care of poultry Cook chicken	<ul style="list-style-type: none"> • To be reached through women groups • To be educated on AI and reinforcement of hygienic practices • To be trained and be encouraged to educate household members, and to ensure compliance to prevention measures at home • Report chicken deaths due to AI
Young people	Care of poultry and sales of egg and poultry products Disposal of dead chickens	<ul style="list-style-type: none"> • Target youth in and out of school • Young people out of school can be reached through youth association • Promote and ensure compliance to hygienic practices in school • Train and motivate youth to become peer educator, and change agent at home and in their community • Sensitize on the risks of AI associated with handling pigeons
Traditional leaders	Trusted source of information	<ul style="list-style-type: none"> • To participate in stakeholders committee meetings at community level. • To be educated on AI and prevention measures • To be trained and be encouraged to educate community members, and to ensure compliance to prevention measures at home • To be tasked to monitor the reporting

Individuals and groups	Role in relation to AI	Implication for communication interventions
		of dead chickens
Vet doctor	Professional in poultry rearing Credible source of information for commercial poultry farmers	<ul style="list-style-type: none"> • Vet doctors can be reached through POFAN • Participate in stakeholders committee meetings at community level. • To be trained and equipped to educate commercial poultry farmers
POFAN	Community mobilization and education in recent AI outbreak	<ul style="list-style-type: none"> • To participate in stakeholders committee meetings at community level. • To be trained and equipped to educate commercial poultry farmers
Elderly and experienced poultry farming in rural communities	Credible source of information on poultry in rural area	<ul style="list-style-type: none"> • Participate in stakeholders committee meetings at community level. • To be trained and equipped to provide accurate information on AI

SOURCES OF INFORMATION

Radio, television, and community, religious and traditional leaders were the reliable and trusted source of information in both States. Working with traditional and religious leaders help gain trust, support, and adhesion from the community members. Traditional leaders are known as the gatekeepers of the identity of the community.

In urban settings, development associations, government officials, professional associations, extension service centers, international media, vet doctors, vet doctors and vet clinics, hospitals and health centers were also listed as reliable source of information.

Word of mouth was the main source of information in rural areas where mass media was less accessible. Word of mouth seemed to be very active in areas where traditional structures were present and strong.

The reach/coverage of BCC materials (posters, flyers) was very limited. These materials were mentioned only by a few people in urban Lagos.

KNOWLEDGE OF AI

Knowledge of the causes of AI was low in the general population, both in rural and urban areas in Kano and Lagos States. A few months after the outbreak, community members were still wondering what were the causes and the origin of AI. The level of knowledge of women in rural Kano State was the lowest. Limited knowledge on AI led to all sorts of suspicions and accusations on the origin and causes of AI. In both States, AI always came from somewhere else. For Lagos state, AI came from abroad through the northern States. For Kano State, AI also came from abroad but through the southern States. The suspicion that AI may have been introduced by the government and/or rich people in order to take over the business from the actual poor owners was presented in Kano and Lagos States. Most people in both States believed that AI was transmitted by air.

PERCEIVED IMPACT OF AI

Surprisingly, although most households raise free range chickens to help meet their cultural and social obligations, community members did not spontaneously mention the negative impact of AI on fulfilling social and cultural rites. When asked about the impact of AI, community members in both states always mentioned the impact on livelihood, such as loss of income and jobs, and the inability of the affected household heads to provide for their family. According to community members, poultry farmers were the hardest hit by AI.

NO ALTERNATIVE TO CULTURAL RITES

More than nine months after the outbreak of AI, fear was still present in most communities. Most community members were affected by AI. In some instances, community members were able to find alternatives to chicken. For example, for naming and other ceremonies, chicken was replaced by beef, fish, goat meat mutton or crabs (for communities with access to seafood). However, the place of chicken in certain rites could not be filled by other substitutes. People believe that if all chickens were exterminated by AI, they would not have anything left to use to appease their gods and that was very worrisome. Most people were afraid that AI could come back and could kill all birds and human beings. The fact that most people were not certain of the causes of AI and how to protect themselves from AI was still of great concern.

MESSAGES

DISSEMINATION OF CONFLICTING MESSAGES

From the community perspective, the dissemination of messages on AI started late and the messages were contradictory. Table 9 shows that the government sent out three sets of different messages within a 4-week interval. The dissemination of the first message occurred late, in February 2006, four months after community members had been experiencing the damages caused by AI. The content of the messages and its interpretation by the community varied greatly. From the community's interpretation the second message contradicted the first. It is not clear how much the community was involved in the development of messages and if the messages were pre-tested before being released.

Table 9: Messages disseminated, period and interpretation from the community

Messages	Period	Interpretation from the community
Avoid contact with infected chicken	Early February 2006	Don't eat chicken
Wash chicken thoroughly, boil for a long time, fry very well before eating	Late February 2006	Clean, boil, fry before eating
Presidential Committee on the Prevention and Management of the Avian Influenza announced a relief scheme to poultry farmers at the following rates: (a) Chicken, N250 (b) Duck, N1,000 (c) Goose, N1,000	Mid- February 2006	Compensation will be paid by the government for poultry losses

The dissemination of two sets of conflicting messages in such a short time raised some questions and concerns in people's mind. The fact that the messages disseminated were in English limited the access to those that could read or understand English. In Nigeria, most messages targeting community members had always been translated into local languages to increase access to a large number of people. The fact that the messages on AI were in English, could have contributed to perpetuate the perception that AI came from abroad.

NO EMPHASIS PLACED ON PREVENTION/ HYGIENIC PRACTICES

Table 9 shows the three messages that the community members retained. These messages did not refer to hygiene. Messages with prevention measures including hygiene were among the messages on the posters and booklets developed by the Lagos State Ministry of Health. However, most community members did not mention the posters as a source of information. The messages on hygiene may have been disseminated on the radio and television as well, along with other messages on AI. It seemed that only two priorities were on people's mind; 1) avoiding eating chicken to prevent the spread of AI to human beings, and 2) limiting financial losses due to AI. Therefore, people did not pay attention to the messages related to hygiene.

The lesson learned from this includes the following:

- Always choose/select the most relevant messages for the situation and for the target audience.
- The number of messages for each target audience should be limited to what is the most important to know and to do at that point in time. If many messages are disseminated, the target audience may skip important messages.
- The timing for the dissemination of messages is also very important. The perfect time is when the target audience is ready (asking for it) to act upon.
- Community leaders should be involved in defining the content, timing/period of dissemination of specific messages.

Flooding people with numerous messages is not effective. Messages should be tailored to specific audience and should vary depending on the situation, and the timing of dissemination of the messages should coincide with when the target audience is ready to act.

COMMUNITIES ARE READY TO IMPLEMENT PREVENTION MEASURES/ACTION

People are still recovering from the recent outbreak of AI. Some people are trying to restart poultry farms; all households have already started raising local breeds for their social and cultural rites. People are looking for accurate information on the causes of AI and the methods of prevention to help them prevent AI. The government and the local authority should build on the desire of the community to prevent AI, and should initiate the dialogue with community leaders on the acceptable and effective methods to prevent AI in the community. The local authority should equip these players with the knowledge and skills to enable them

to effectively work with community members for the adoption of behaviors to help prevent AI.

Community leaders will ensure adherence and compliance to the recommended practices, including hygienic practices at household and community levels. If empowered now with the appropriate knowledge and skills, community members will surely make use of the information and skills at household and community levels. The findings of PAR revealed that community leaders listed compliance to hygienic measures as actions they wanted to carry out in order to prevent the spread of AI. If local authorities do not fill this thirst for information on methods of prevention now, the momentum and eagerness of community members to reinforce hygienic practices and prevent AI will be lost.

THE GOVERNMENT PREFERRED COMMUNICATION CHANNELS

The government opted for the use of mass media to reach out to a large number of people, especially radio which has a very wide coverage. Newspapers and TV were also used to reach urban communities and those who have access to them. The government did not take advantage of the existing, trusted, and reliable communication channels available in the communities such as traditional leaders, clergymen, and community leaders, considered to be the most trusted and reliable channels of communication listed in both States and in both urban and rural areas.

The communication channels used (radio and television) did not help answer the questions people had. In the design of any communication intervention, these trusted and reliable sources of information should be listed and used along with mass media. Messages disseminated should be harmonized and should be consistent.

Two factors helped to perpetuate doubts about AI: first the dissemination of two sets of contradicting messages within 3–4 weeks intervals, and the lack of utilization of existing, reliable, and trusted communication channels for the community.

Some community members in both states were still wondering if AI had ever existed. A few community leaders did not admit that any case of AI in their community ever erupted.

Box 14. From denial to acceptance and support

In Ajara Topa/Lagos, the traditional leader (Chief) who demonstrated a lack of interest in PAR activities at the beginning of the exercise turned into a canvasser on the community sharing day, transformed and very excited to share what he heard on the radio. He said that the radio announced that AI had killed people in Northern Africa. Then he realized that the work the team was doing was very important and relevant for his community. At the community sharing meeting, the Chief encouraged the participants to take the matter seriously and improve their hygiene. He confirmed his willingness to be involved in any activity that will help prevent further outbreak. He explained to community members that the PAR team was in their community to help them reflect and find solutions to AI.

The story in Box 14 shows that some leaders have not yet come to grips with AI. Some are aware of the devastating impacts in their community; however, they don't know if they should talk about it or not.

RELATIONSHIP WITH AUTHORITIES

The relationship between community members and authorities was greatly affected by the way the recent outbreak of AI was handled.

PERCEPTION OF COMMUNITIES OF BEING NEGLECTED AND ABANDONED BY LOCAL AUTHORITIES

The fact that communities and their leaders were not involved was perceived as neglect and a lack of interest and concern from the state authorities. Most community members were very disappointed by the absence of physical presence and support from the authorities in their community when facing the difficult situation created by the outbreak. Local authorities did not go to the people to explain and discuss the problems experienced and help identify solutions. The silence and absence of local authorities fueled rumors in rural areas where access to radio and television were limited. The use of mass media only to disseminate information could have contributed to and increased the feeling of being ignored by authorities. The use of interpersonal communication could have helped bridge the gap between community members and authorities, maintain contact, solve problems, and reinforce the partnership and dialogue.

IMPORTANT ISSUES FOR COMMUNITIES

Culling and compensation were perceived as very important issues for community members. The lack of information on culling and compensation aggravated the suspicion and accusation directed at the authorities. The fact that community members were not involved in the process of defining the conditions and amount for compensation was perceived as a deliberate act of authorities to 'cheat' them. Nine months after the outbreak, community members were still not informed on this important issue.

Different Views on Compensation

Community members expected that compensation should be equivalent to the cost/price of culled or dead chickens during outbreak; while for authorities, compensation was a "token" for culled chickens only. This difference should be addressed through dialogue between community leaders and authorities. Government fixed the sum of ₦250 for each chicken lost and a little bit more for other bigger birds. However, this amount was considered to be too small by the people, which prompted the government to retract the concept 'compensation' and refer to it as an assistance.

Another important cause of frustration and anger of the community was that compensation was not yet paid in some areas. Compensation should occur right after culling to allow the affected persons/households to start another business to meet their family needs.

Different Views on Reporting

The reasons for reporting dead chicken/birds were still not clear and not convincing for community members. Community members did not think they had to report dead birds. They believed that the birds belonged to them and that the government had nothing to do with that. Community members were not convinced that they should waste their time to go to local authorities to report dead birds. Community members did not see/perceive any benefits for them to report dead birds. This was a call for information and need for sensitization on the risks associated with handling dead local or foreign breeds.

ABILITY OF INDIVIDUALS AND GROUPS TO TAKE ACTIONS

Two important lessons learned from PAR were 1) the widespread awareness of the risks associated with rearing and selling poultry across high and medium-income people, and 2) the demonstrated ability of people in both States to take actions to address AI.

AWARENESS OF THE RISKS ASSOCIATED WITH POULTRY/CHICKEN REARING/MINGLING AND SELLING



Force field analysis, women, Kano

High and medium-income people in the communities became very aware of the risks associated with being in contact with poultry. This awareness created a hunger for accurate information of the causes of AI and the need for acquiring appropriate skills, and also getting external support to effectively prevent AI and mitigate its impact. Conversely, this situation was an opportunity for some food insecure people to make the maximum benefit out of it. It was not clear if this group was fully aware of the risks associated with handling sick and dead birds. The first motivation was the availability and

affordability of a type of food that “they like so much” and could not afford in normal circumstances. The second motivation was the monetary gain.

The level of awareness of the risks associated with handling sick and dead chickens varies across social groups. The development of any community communication intervention should take this reality into consideration.

COMMUNITY MEMBERS UNDERTOOK ACTION INDIVIDUALLY AND COLLECTIVELY

While facing the dangerous situation of AI, community members did not wait for the government before deciding to fight AI. The actions undertaken aimed at preventing further spread of AI to poultry and to human beings as well as mitigating

its impact. The actions undertaken by various groups in the community are listed in Table 10.

Table 10: Actions undertaken by various group during the recent outbreak of AI

People /groups of people	Actions undertaken
Household	Not buying and eating egg and chicken Burying dead chicken
Backyard poultry owners	Giving traditional medication to chickens such as giving hot water and pepper
	At the beginning of the outbreak, increased consumption of chicken; giving away chickens to friends and to relatives Prayers
Semi-industrial poultry owners	Vaccination Selling chickens very cheap Culling and burying
POFAN	Mobilizing and educating communities Putting pressure on the authorities to step in and support communities
NGOs	Dissemination of messages on AI

LIMITATIONS OF COMMUNITY ACTIONS

Though community members took actions to prevent AI and to mitigate its impact, they became frustrated as they realized that they did not have all the tools they needed to effectively address AI. The community actions developed during PAR exercises shed light on areas in which communities need support. These areas included:

- Information/knowledge and skills' building
- Access to appropriate and relevant BCC materials
- Funding to fill the gaps
- Reinforcement of the implementation of the existing legislation in relation to compliance with bio-security measures by poultry farmers.
- Support to reinforce the application of hygiene measures in community
- Capacity building of community leaders to conduct community surveillance

COMMUNITY RESOURCES

PAR findings revealed that community members mobilized their own resources when facing a problem that could affect their income and could be life threatening. Community resources listed during PAR include the following:

- Community volunteers
- Social institutions and network in the community including traditional leaders, clergy men, town criers, youth association
- Community structures and facilities for meeting
- Community leadership

FACILITATORS FOR CHANGE - CATALYST FOR CHANGE

In designing communication interventions, facilitators for change should be identified and used as catalysts to initiate and sustain positive change in the community. Facilitators include economic, social, and cultural factors.

Risks of death - life threatening situations

A life threatening situation is the most powerful factor that forces people to change their behaviors. While exploring what the community can or will do if faced with widespread or pandemic AI, they were ready to:

1. Forsake or put aside age long practices such as changing eating habits, removing poultry from living quarters to separate places thus reducing the level of interactions, consulting vet doctors to improve poultry practices, reinforcing the implementation of hygienic measures at household and community levels.
2. Cull birds
3. Opt for alternatives to chicken in ceremonies.

In a life threatening situation, the options listed above should be left at the discretion of individuals and communities. However, authorities should be proactive in anticipating “control measures” to limit the chaos created by the situation, because communities’ reactions could be protectionist, very exclusive

and extremist in the context of life threatening situations. Discussions should be held with community leaders to explore and agree on the actions to be carried out in case of outbreak, widespread, and pandemic.

Threatened livelihoods - Reduced income

When the livelihood is threatened or the risk of wiping out the source of income exists, community members can take very drastic measures to limit the loss. PAR findings revealed that poultry farmers and traders were in the forefront of the fight against AI because their livelihood was threatened. Individuals took various initiatives to limit the negative impact on their livelihood such as separating sick and healthy birds, cutting the price of birds, and burying dead birds. During the recent AI outbreak, community members also opted to give away their chickens, to eat as much as they could to avoid total loss, and to bury dead chickens to reduce/avoid the risk of spreading infection to other birds and humans.

Raising awareness on the negative impact of AI on livelihoods and income could motivate community members to adhere to hygienic measures in order to prevent AI.

ADDRESSING BARRIERS TO CHANGE

Barriers to change are important elements to be identified with community members. Barriers to change listed during PAR include:

- Limited knowledge on the causes, origins, and methods of prevention of AI The level of knowledge of women was the lowest in Kano State.
- Limited perception of risks – The awareness of the risks associated with poultry was different across social groups
- Limited skills to address the problem
- Inadequate resources
- Lack of alternatives to cultural rites

Means of addressing these barriers should also be explored with the community.

rites: highly sensitive and vital practices for communities in both states

The use of chicken for rites was brought up and discussed with community members only after the PAR team had spent a few days in the community and when community members felt comfortable enough to discuss such sensitive issues with the team. Issues related to rites are too sensitive and internal to the community to be discussed openly with people who are not from the community. Any decision related to rites should be taken by community members and not by people who are not from the community.

Chickens are indispensable for rites in both States. Community members think that chickens protect members of the household against external dangerous situations. The death of chickens is therefore, to be perceived as protective for the family. This situation is accepted even if this inflicts financial losses to the family. Community members will be very worried if all chickens were dead due to AI; they could not perform their rites and would feel unprotected. The high mortality of chickens during AI can be used as motivation to engage communities to implement recommended prevention measures to prevent AI.

CONCLUSION

Surprisingly, PAR findings brought out striking similarities in the way communities perceived their relationship to poultry, the impacts of AI on their lives, their relationship to local authorities mainly during the recent outbreak of AI, the actions undertaken to fight AI, and the actions to be undertaken in the future with the involvement of the traditional, religious, and community leaders, both in Kano and Lagos States. Some differences were noticed in the rural and urban areas.

Chickens are present in most households. Chickens are used for consumption, income, gifts, and rites. Chickens have a high economic, social, and cultural value for most people in Kano and Lagos States. Women, men and children own chickens. However, the household head is the one making the decision on the use of poultry. For most households, the recent outbreak of AI disrupted life and negatively impacted food security, and social and cultural obligations that require the use of poultry.

Equipped with limited knowledge and skills, community members undertook some actions to limit financial losses and to prevent AI from spread to human beings. The absence of dialogue between communities and local authorities on the causes

and methods of prevention, culling and compensation, and reporting created suspicion and distrust toward local authorities.

After the recent outbreak of AI, community members were gradually, but fearfully going back to “poultry business.” Communities felt that they were still not well equipped to fight AI if an outbreak was to reoccur. Communities also felt neglected and not supported by local authorities during the recent outbreak of AI.

RECOMMENDATIONS FOR COMMUNICATIONS INTERVENTIONS

From the communities’ perspective, the actions from the government were top down and did not meet people’s needs. To be effective, any future communication intervention requires a shift in the approach and in the focus. Since the impact of AI was the most felt at community and household levels, the focus in the fight against AI should be at community and household levels. This requires a shift from government driven to community-based interventions.

SHIFT IN THE APPROACH

Local government authorities should hold discussions with community leaders to reflect on the lessons learned from the recent outbreak of AI and discuss the way forward.

Communication interventions to address AI should be designed and implemented with communities. This requires a two-step shift in the approach. The first step will be to move from government driven and the second step will be to move from community-based and to community-driven interventions as soon as community leaders become competent to address AI.

FROM GOVERNMENT DRIVEN TO COMMUNITY-BASED INTERVENTIONS

The move from government driven to community-based interventions should aim at concentrating the fight against AI at household and community levels.

Working With and Through Community Leaders

The effects of AI were most felt at household and community levels; therefore, communication interventions should focus at these two levels to encourage/promote the recommended attitudes and behaviors/practices to prevent AI and mitigate its impact. AI is a concern/problem for individuals, households, and communities. Therefore, working with community leaders will help gain support and adherence of community members at all stages of the interventions.

Building Local Capacity to Address AI

For some members of the community, AI is a new disease for communities. Community leaders and members do not know how to effectively address AI. Government and local authorities have not yet gained experience in effectively working with communities to address AI in Nigeria. Local authorities can gain this experience by holding meetings with community leaders. Topics of discussions include, but they are not limited to:

- Economic, social, and cultural factors that prevent, or contribute the expansion of AI
- Target audiences
- Culling and compensation, rationale and guidelines
- Discussion and agreement on how communities can participate in the fight against AI
- Discussion and agreement on how to approach/address rites in the context of AI
- Surveillance, monitoring and reporting

Hold Discussions on Culling and Compensation

The purpose of the discussion should be to reach the same understanding on the concept and decide on how to implement this in the context of AI. Community leaders should take on the responsibility to discuss culling and compensation with community members.

Hold Discussions on Reporting

Local authorities should explain the goal and objectives of reporting sick and dead birds and should highlight the benefits of this activity for community members. Community leaders will work with community members to establish a monitoring and reporting system or use existing monitoring and reporting system.

Enhance Community Competence to Fight AI

Empowering community leaders with appropriate knowledge and skills to fight AI will help drive communication interventions at community level.

FROM COMMUNITY-BASED TO COMMUNITY DRIVEN INTERVENTIONS

As soon as community leaders become competent to fight AI, they will be in a position to successfully interact and engage community members and stakeholders in implementing recommended behaviors/practices to prevent and mitigate the impacts of AI. Interventions to fight AI will therefore become community driven. The following sections describe the critical elements/points of communication interventions, community leaders should address with community members. Professional and experienced people in the community should be called upon to assist as appropriate.

Identify Relevant Target Audiences

Target audiences should include people or group of people involved or concerned by “poultry business”, either because they are raiser, care-giver, user, or trader.

The target audiences identified by community members during PAR include:

Women, young people, fathers/men, vet doctors, elderly with poultry experience, POFAN, and community leaders (including religious and traditional leaders).

Each community should identify and include additional target audiences that are relevant to their context.

Develop Relevant Messages

Community leaders should be involved in the development of messages to address AI. The messages should promote positive actions/practices to prevent AI. The messages should also include motivations to help people move from knowledge to action/practice. For example, the PAR findings revealed that the protection of the livelihood was a strong motivation that could push/motivate people to adopt positive practices/behaviors. This could be used as motivation to engage men, poultry farmers, and traders to practice recommended hygienic measures.

Develop and Disseminate Messages to Educate the General Population on AI

Messages for the general population should be developed and should provide information on the causes and the methods of prevention of AI. These messages should be translated into main languages, and pre-tested before being disseminated.

Specific Messages for Each Target Audience

Each target audience should be called upon and engaged according to his role in “poultry business”. For example, poultry trader should be engaged on issues related to hygienic and safe transportation, handling poultry, and handling dead chicken.

Select and Use Appropriate/Relevant Channels of Communication for the Community

Messages should be disseminated through the most trusted and reliable communication channels for the community. These should include an appropriate mix of interpersonal communication channel and mass media. The PAR findings revealed that radio and community leaders⁵ were the most trusted and reliable communication channels in the community. These three channels should constitute the minimum to start with in each community. Relevant traditional

⁵ Community leaders include religious, traditional leaders, and influential people in the community.

communication channels such as songs, dance should be identified and used as appropriate.

Harmonize and Disseminate Consistent Messages

The content of messages should be harmonized and be consistent. The PAR findings revealed that conflicting/contradictory messages were very disturbing and disruptive for community members in Lagos and Kano States.

Move to Action: Define Priorities

During the recent outbreak of AI, community members undertook specific actions to fight AI. Any communication intervention should acknowledge the capacity/ability of community members to come together and fight AI. The PAR findings revealed that when people are flooded with messages, they tend to select only a few to act upon. They may skip the most important ones. The stage in AI should help prioritize the messages and the actions to be promoted.

SHIFT IN THE FOCUS: FROM REACTION TO PREVENTION

After reacting to the first outbreak of AI, community members are ready/eager to learn how to prevent AI and mitigate its negative impact on their livelihood and lives. The PAR findings highlighted how much communities need/value chickens for social, cultural, and economic reasons.

SENSITIZE AND MOTIVATE COMMUNITIES TO ADHERE AND COMPLY TO PREVENTION MEASURES NOW

PAR findings revealed that hygienic practices were below standard in all the four sites. While efforts to promote hygienic practices should be targeted to the general population, a special attention should be paid to young people and women.

Special Attention to Women

Women provide care to chicken at home. They are in contact with free range and back yard chickens frequently. Women also have the responsibility to educate their children. Working in tandem with women in the community and with young people

in and out of school will help strengthen hygiene practices such as hand washing at household and community levels.

Special Attention to Young People

Young people provide care to poultry at home and some are interested in “poultry business”. A few took advantage of AI and made some profit by selling sick, dead cooked chicken during the recent outbreak.

Young people in and out of school should constitute the primary target audience for messages on hygiene. Young people are in charge of the care of free range chicken; they are more receptive to change than adults. School is an ideal environment where basic hygiene practices such as hand washing should be reinforced. Young people should also serve as change agents in their community. They should be tasked to discuss the messages/actions being promoted in school with their parents and siblings and with other young people in their community.

Reaching out to Poultry Farmers and Traders

POFAN and community leaders should work closely with poultry farmers and traders to strengthen practices that help to prevent AI. POFAN and community leaders should carry out follow up visits with poultry farmers and traders to ensure compliance to hygienic practices.

BE PRO-ACTIVE: HOLD DISCUSSION ON WIDESPREAD AND PANDEMIC AI

After communication activities had been successfully launched and had taken root in the community, community leaders should be encouraged to hold discussions with community members on how to address widespread AI or pandemic if this was to happen. The purpose of the discussion will not be to alarm community members, but to be proactive and get people think about what to do if facing the problem. This discussion should provide the opportunity to engage community members to discuss the dilemma of addressing social and cultural obligations that could contribute to spread AI.

SUPPORT AND ACKNOWLEDGE COMMUNITIES' EFFORTS

Communication interventions at community level should be coordinated with the government and stakeholder efforts at LGA and State levels. Meetings should be held at these levels with community representatives to discuss the activities being carried out by communities and identify the support needed from the higher level. LGA and State levels should also find strategies to continue to engage and motivate communities to fight AI.

SUPPORT COMMUNITIES' EFFORTS

LGA and State level authorities should be responsive to the needs expressed by communities. LGA and State levels authorities should hold meetings with community leaders to discuss the types of support the LGA and State could provide to communication interventions at community level. A system should be put in place to access these resources in a timely manner.

SHARE LESSONS LEARNED

LGA and state level authorities should work with community leaders to generate and disseminate relevant lessons on the prevention and mitigation of the impact of AI.

IDENTIFY AND DISSEMINATE BEST PRACTICES

LGA and State level authorities should also work with communities to identify and disseminate community level best practices in the fight against AI.

PROMOTE “COMMUNITY CHAMPIONS”

Acknowledging and recognizing communities that are successfully fighting AI is critical to keep the momentum high and motivate communities to learn from each other. LGA and State level authorities should identify and promote “community champions” that had carried out unique and successful communication interventions to fight AI.

ANNEX 1: TOOLS USED DURING PAR

PROCEDURE A: COMMUNITY MAPPING

Purpose: The purpose is to establish a rapport with the villagers, to identify the activities that people carry out for living, and to highlight the importance of poultry for the household and the community. The community mapping provides a visual representation of the community. The map shows geographical features, infrastructure, types of facilities, livestock, markets, where to find poultry owners, where poultry is found (e.g., in/outside houses), and where the credible/resource people can be found in the community.

Who: This will be done by 2 interviewers with a group of men, women, and young people (6-8 people in each). The participants should not be too old or too young.

Materials: Flip chart and a marker to draw the maps

Procedure: Have the group sit or stand near an open area. Try to keep the number of spectators to a minimum. One interviewer will facilitate the group while the other interviewer takes notes.

The facilitator explains the purpose of the exercise.

Ask the participants to draw the map of their community and to show important landmarks.

Once the outline of the community has been drawn up, ask them to mark the following using specific signs/legends:

- Poultry owners: backyard poultry (sector 4), backyard semi-commercial poultry (sector 3, 50 -100), and industrial farms
- Market where poultry is sold
- Livelihood: activities generating income for the household
- Community leaders
- Meeting place

The note taker observes and notes the interactions between the participants and records all the discussions occurring during the community mapping exercise. After the exercise, the pair (facilitator and note taker) should fill out the cover page sheet and transcribe all the information collected on A4 paper

PROCEDURE B: TRANSECT WALKS

Purpose: To appreciate the level of interaction between people and poultry, hygiene practices, the uses of poultry, and the importance of poultry in the household and community livelihood. Transect walks will provide information on hygiene practices and the implications for human health. Transect walks will also help gain understanding of the time of the day when poultry transactions occur the most.

Who: This will be done by 2 interviewers/observers. Referring to the community map drawn in the previous exercise, each pair will make transect walks from one end of the village to the other.

When: Each pair of interviewers will carry out transect walks throughout the day.

Materials: Transcript form, notebook and pen

Procedure: Walk in the community, **observe** activities related to poultry, and **pose** questions to community members involved to gain a better understanding of the practices.

The items to observe include, but are not limited to, the following:

- Places where poultry is found in the community
- Movement of poultry in the community
- How poultry is transported
- Care of poultry: who is involved, care practices
- Market where poultry is sold
- Interactions of the traders and the poultry
- Place where poultry is kept in the market

Explore with people the following:

- Reactions during AI outbreak (the individuals and the people involved in caring for or trading poultry)
- Impact of AI on household consumption of chickens and on livelihood
- Support during outbreak – type of support, institutions providing support (including IEC materials), feedback on the support received
- Perception of AI in the specific community

The note taker observes and notes any non-verbal communication and records all the answers of the interviewees. After the exercise, the pair (facilitator and note

taker) should fill out the cover page sheet and transcribe all the information collected on A4 paper

PROCEDURE C: PARTICIPANTS' OBSERVATIONS

Purpose: Gain a better understanding of the care given to poultry, the movement of the poultry, and hygiene practices in relation to poultry.

Who: Two members of the team will observe a) a chicken and b) a poultry raiser during the day.

Procedure: Two types of observation will take place during this exercise.

a) Observe a chicken for 3-4 hours

Two interviewers will follow a chicken through the morning and will record the interactions of the chicken with community members.

Observe and write down the following:

- All types of interactions of the chicken with community members.
- Care given to poultry (who gives the care, describe the care given).
- Hygiene practices.

Observe 2-3 chickens.

The note taker observes and records all the types of interactions of the chicken with community members, care given to poultry (who gives the care, describe the care given), and hygiene practice in relation to poultry. After the exercise, the pair (facilitator and note taker) should fill out the cover page sheet and transcribe all the information collected on an A4 paper

b) Observe a poultry raiser

Two interviewers will visit a poultry raiser in the community. The team will ask the poultry raiser to train them on how to raise chickens.

The interviewers will:

- Observe and write down all the tasks/activities carried out by the poultry raiser.
- Ask the poultry raiser the reasons for carrying out each of the tasks.
- Note all the interactions of the poultry raiser with poultry and hygiene practices.

Each team will observe one poultry raiser.

The note taker observes and records the tasks/activities carried out by the poultry raiser, the reasons for carrying out each of the tasks, and the interactions of the

poultry raiser with poultry and hygiene practices. After the exercise, the pair (facilitator and note taker) should fill out the cover page sheet and transcribe all the information collected on A4 paper.

Materials: Notebook and pen

PROCEDURE D: SEASONAL CALENDAR

Purpose: To understand the seasonal variations in the care for poultry, use of poultry, and livelihoods.

Who: This will be done by 2 interviewers with 6 groups of people (6-8 people in each). The participants should not be too old or too young.

Carry out seasonal calendar with:

- 1 group of women
- 1 group of men
- 1 group of young people

Materials: Flip chart and markers (different colors)

Procedure: Have the group sit in circle, near an open area. Try to keep the number of spectators at a minimum. One interviewer will facilitate the group and the other interviewer will encourage the community members to participate in the exercise and will take note.

The facilitator will explain the purpose of the exercise.

Begin with the local names of the months and seasons. Ask the group members to divide up the calendar year.

Ask the participants to fill the boxes...according to the **intensity of the event/indicator**.

The seasonal variations to be studied include the following:

- Poultry coming into the house
- Care for poultry
- Use of poultry (consumption, rituals, selling, buying, and gifts)
- Children's health
- Nutrition (staples, food most commonly consumed, hierarchy) – meat/vegetables
- Livelihoods (seasonal variations in activities)

If one flip chart is not enough, attach a second flip chart and continue the exercise. When all of the seasonal calendars have been drawn, ask the participants to comment on the trends observed in the seasonal calendars. The second interviewer should write down the explanations provided by the group.

The note taker observes and notes all the interactions and records all the discussion that occurs during the seasonal calendar exercise. After the exercise, the pair (facilitator and note taker) should fill out the cover page sheet and transcribe all the information collected on A4 paper.

PROCEDURE E FOCUS GROUP DISCUSSION

Purpose: Gain a better understanding of the knowledge, attitudes, and perceptions in relation to Avian influenza.

Who: This will be done by 2 interviewers with 3 groups of people (6-8 people in each). The focus group discussion will be carried out with one group of men, woman, and young people. The participants should not be too old or too young.

Materials: Tape recorder, notebook, and pens

Procedure

Have the group sit in a circle, near an open area. Try to keep the number of spectators to a minimum. One member of the team will be the facilitator and the second will be the note taker. The facilitator will explain the purpose of the exercise.

The facilitator will ask questions¹ using the focus group discussion guide. The facilitator will also ensure that all the members of the group participate in the discussion. At the end of the focus group discussion, the facilitator will thank the group for their time and their participation.

The note taker will take notes on the focus discussion group form. S/he will also write down the meaningful **quotes** from the participants. The note taker will write down any non-verbal communication that occurs during the discussion.

A focus group discussion should not last more than an hour.

The note taker observes and notes all the interactions and records all the discussion that occurs during the focus group discussion. After the focus group

discussion, the pair (facilitator and note taker) should fill out the cover page sheet and transcribe all the information collected on A4 paper.

PROCEDURE F BEAN QUANTIFICATION

Purpose: Gain a better understanding of the use of poultry in the household.

Who: This will be done by 2 interviewers with 5 groups of people (2-4 people in each). The participants should not be too old or too young.

Bean quantification will be carried out with:

- One group of women
- One group of men
- One group of young people
- One group of backyard poultry farmers (sector 4)
- One group of village semi-commercial backyard poultry owners (sector 3)

Materials: Beans, gravel, notebook, pen

Procedure

Have the group sit in circle, near an open area. Try to keep the number of spectators to a minimum. One interviewer will facilitate the group and the other interviewer will take notes. The facilitator will explain the purpose of the exercise.

Explain what the beans or gravel represent. Give participants 100 beans or some gravel and ask them to illustrate the use of poultry in the household using these items. The facilitator will ask the members of the group to explain the distribution/repartition of the beans that they have come out with.

The note taker will take note of the discussion that occurs during the repartition of beans. The note taker will also write down the **quotes**.

The exercise should not last more than an hour with a group.

The note taker observes and notes all the interactions and records all the discussion that occurs during the bean quantification exercise. After the exercise, the pair (facilitator and note taker) should fill out the cover page sheet and transcribe all the information collected on an A4 paper.

PROCEDURE G VENN DIAGRAM

Purpose: Identify a credible source of information and a place of gathering in the community. Gain a better understanding of the care given to poultry in the household.

Who: Two interviewers will carry out a Venn diagram exercise with a group of men, women, and young people. The first interviewer will be the facilitator and the second interviewer will be the note taker.

The Venn diagram will be carried out in each site with:

- One group of men
- One group of women
- One group of young people

With each group, the interviewers will carry out two Venn diagram exercises:

- 1) The individuals and institutions providing care and advice to people about poultry
- 2) The type of care given to poultry in the household, who gives the care, and how often the care is given

Materials: Flipchart and markers (different colors)

Procedure

Have the group sit in a circle near an open area. Try to keep the number of spectators to a minimum. One interviewer will be the facilitator and the second will be the note taker. The facilitator will explain the purpose of the exercise. The note taker will take notes on the discussion that occurs during the Venn diagram exercise and on the **quotes**.

- a) The facilitator will ask participants to draw on the flipchart:
 - The individuals and institutions providing care and advice to people about poultry
The facilitator will ask participants to specify how often individuals and institutions interact with communities.
- b) The facilitator will ask participants to draw on the flipchart:
 - The types of care given to poultry in the household, who gives the care, and how often the care is given.

The note taker observes and notes all the interactions and records all the discussion that occurs during the Venn diagram exercise. After each exercise, the

team will fill out the cover page sheet and transcribe the Venn diagram and the information collected on A4 paper.

PROCEDURE H IN-DEPTH INTERVIEWS

Purpose: Gain a better understanding of the effects of AI on the community.

Who: Two interviewers will carry out an in-depth interview with the following people in the community: a male leader, a female leader, the agriculture extensionist, the vet working with that community, a community volunteer, a poultry trader, the chief of the village, and the LGA chairman. The first interviewer will be the facilitator and the second interviewer will be the note taker.

The following people will be interviewed:

- Male leader
- Female leader
- Agriculture extensionist
- Vet
- Community volunteer
- Poultry trader
- Chief of the village
- LGA chairman

Procedure

Sit with the person in a quiet place where you will not be disturbed. Try to keep the spectators out. The facilitator will explain the purpose of the exercise. The facilitator should ask questions in the following order:

1. AI contained and controlled
2. Widespread AI
3. Pandemic AI

For widespread AI and pandemic AI, the facilitator will ask the participant to recall a similar situation that has happened in the past, or s/he will tell the facilitator a story about widespread AI or pandemic AI to help them come up with responses to the questions asked. The purpose of section 2 and 3 is to help key informants be proactive and to anticipate solutions for a problem that has not yet occurred.

The in-dept interview should not last more than an hour per person.

The note taker observes and notes any non-verbal communication and records all the answers of the interviewee. After the exercise, the pair (facilitator and note

taker) should fill out the cover page sheet and transcribe all the information collected on A4 paper.

PROCEDURE I CAUSAL FLOW DIAGRAMS

Purpose: Explore community's knowledge and perceptions of the causes, consequences, and actions to be undertaken to prevent AI, or to mitigate its impact on the household and on the community.

Who: Two interviewers will carry out a causal flow diagram exercise with a group of men, women, and young people. The first interviewer will be the facilitator and the second interviewer will be the note taker.

The causal flow diagrams will be carried out in each site with:

- One group of men
- One group of women
- One group of young people

Materials: Flipchart, markers, beans, and gravels

Procedure

Have the group sit in circle, near an open area. Try to keep the number of spectators to a minimum. The facilitator will explain the purpose of the exercise. The note taker will take notes on the discussion that occurs during the causal flow diagramming exercise.

The facilitator will explore 3 situations with the group:

1. AI outbreak is contained
2. Widespread AI
3. Pandemic AI

For each situation, the facilitator:

1. Explores with the participants the causes of AI, the consequences of AI, and the actions to be undertaken. The actions to be undertaken include a) the actions led and implemented by the community with some or no assistance from the government and b) the actions led by the government and implemented in the community. The facilitator should probe a bit to help participants be very specific when they list the causes, consequences, and actions to be undertaken. For example, if a participant mentions poor of hygiene as one of the causes of AI, the facilitator should probe by asking the participant to specify the exact behavior/practice he is referring to. Then, the

participant might want to add “no hand washing after handling poultry, no sweeping the cage every day...”

2. The facilitator will help the participants regroup the actions listed in main groups/categories. The facilitator will explain that the community cannot implement the actions in all the groups/categories at the same time; therefore, the group will have to prioritize the groups/categories and the actions in each category.

The note taker observes and notes all the interactions and records the discussion that takes place during the causal flow diagram exercise. After the exercise, the pair (facilitator and note taker) should fill out the cover page sheet and transcribe all the information collected on A4 paper.

PROCEDURE J MATRIX RANKING AND SCORING

Purpose: Prioritize the groups/categories of actions identified and the actions in each group/category for the situation of controlled and contained AI.

Who: The same participants and facilitators from the previous exercise (causal flow diagramming).

Procedure:

This exercise is divided into two parts:

- a) Preference ranking
- b) Matrix ranking and scoring

Preference ranking

The purpose is to prioritize the group/category of actions.

1. The facilitator draws a matrix of the group categories across the top and on the left side
2. The facilitator explains that the participants should compare each group/category to another group/category by the asking the following question: “which of these two would you like to implement first, and why?”
3. The facilitator will ask the participants to count the number of times a group/category has been listed.

The note taker observes and notes all the interactions and records all the discussions that occur during the preference ranking.

Matrix ranking and scoring

The purpose is to rank and score the activities in each group/category.

1. The facilitator reads the activities listed in each category and explain that it would be difficult for the community and the government to carry out all the actions listed in the group/category at the same time. Therefore, the participants should prioritize the actions in each group or category.
2. The facilitator helps the participants prioritize the actions in one category first, second, third, and so on.
3. For the first category of actions to be undertaken, the facilitator asks the participants to suggest criteria to help them prioritize the actions to be undertaken. After listing the criteria, the facilitator draws a matrix with the criteria across the top and the actions on the left side.
4. For each action, the facilitator gives 10 beans or gravel to the participants and asks them to distribute the beans in the box corresponding to each criterion according to the ability of that action to meet that criterion.
5. The facilitator gives 10 beans or gravel for the second action and the participants distribute the number of beans or gravel in each criterion and so on. When all the actions have been ranked and scored, the facilitator asks the participants to identify the actions with the most beans in each category in that group.

The note taker observes and notes all the interactions and records the discussions that occur during the matrix ranking and scoring.

After each exercise, the pair should fill out the cover page sheet and transcribe all the information collected on A4 paper.

PROCEDURE K FORCE-FIELD ANALYSIS

Purpose: Identify the resources and the constraints to the implementation of the actions to fight AI in the community.

Who: The same participants, facilitator, and note taker from the causal flow diagramming and matrix ranking and scoring exercises.

Materials: Flipchart and markers

Procedure

1. The facilitator reads the groups/categories and actions identified to fight AI in the community.
2. The facilitator places a blank flip chart with the title “Future” in front of the flip chart with the actions.

3. The facilitator asks the participants to describe the changes in the village when each of the actions listed will be implemented. The facilitator records each change on the “Future” flip chart.
4. The facilitator asks the participants to identify and list the resources already available in the community. This list will be used for the implementation of the actions identified. The resources include human, financial, and material resources. The facilitator asks participants to be very specific when they list the resources available in the community. For example, if a participant says “we have human resources to implement a specific action”, the facilitator should ask whom the participant is referring to. Does this person already have the knowledge and skills to contribute to the fight against AI? When the facilitator probes, the participant might answer: “the community already has two trained community volunteers to carry out group education”. After listing the resources, the facilitator points out the fact that the community already has a good amount of resources to fight AI.
5. The facilitator asks the participants to identify the constraints that may prevent or slow down the implementation of the actions identified. For each constraint identified, the facilitator asks the participants to suggest how they are planning to address it. The constraints identified reflect the support the community will need for implementation of the identified actions.

ANNEX 2: PLANNING OF PAR IN ONE SITE

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Team building <ul style="list-style-type: none"> • Introduction • Objectives of the PAR • Presentation on AI • What is PAR 	Orient the team on community mapping Carry out Community mapping with men, women, and young people	Orient the team on how to carry out participants' observations Carry out Participants' observations of 2-3 chickens and 2-3 poultry raisers	Orient the team on how to carry out focus group discussions Carry out focus group discussions with men, women, and young people	Orient the team on how to carry out in- depth Interviews Story Carry out in-depth interviews with a man and a woman leader, the village chief, a poultry seller, a poultry farmer, and a veterinary	Orient the team on how to carry out flow diagram, preference ranking, matrix ranking, storytelling, and force field analysis Carry out flow diagram, preference ranking, matrix ranking, story telling, and force field analysis with men, women, and young people	Meeting with the community <ul style="list-style-type: none"> • Presentation of the PAR findings by community facilitators • Questions and answers • Closing remarks
<ul style="list-style-type: none"> • Facilitate discussion and exercise on the use of the PAR tools with communities: role play • PAR daily planning 	Orient the team on the use of transect walks and carry out transect walks in the community	Orient the team on seasonal calendars and carry out exercise on seasonal calendars with men, women, and young people		Orient the team on bean quantification and Venn diagram. Carry out exercise on bean quantification and Venn diagram with men, women, and young people		
	Plenary session - Feedback on interactions with communities - Review data collected and findings	Plenary session - Feedback on interactions with communities - Review data collected and findings	Plenary session - Feedback on interactions with communities - Review data collected and findings	Plenary session - Feedback on interactions with communities - Review data collected and findings	Plenary session - Review data collected and findings - Prepare for meeting with the community	

ANNEX 3: PARTICIPATORY ACTION RESEARCH BY RESEARCH THEME

Research Themes	A. Com. Mapping with men, women, & young people	B. Trans Walks throughout the village	C. Particip. Observation: - watch 2-3 chicken -observe 3 poultry raisers	D. Seas. Calendars with men, women, & young people	E. Focus G. Discussion with men, women, & young people	F. Bean Quantification (uses of poultry) with men, women, & young people	G. Venn diagram with men, women, & young people	H. In-depth Interviews with men & women leaders, poultry farmers & raisers, vet, & chief	Causal flow diagrams with men, women, & young people	Matrix ranking with men, women, & young people	Story with men, women, & young people	Force field analysis with men, women, & young people
Poultry coming into the household	x	x	x	x	x	x		x	x	x		
Care for poultry in the household		x	x	x	x		x	x		x	x	x
Seasonal variations and AI in food-insecure & HIV affected households		x		x	x			x	x		x	x
Use of the poultry	x			x	x			x			x	x
Human health, especially the health of children				x	x	x		x	x	x	x	x
Communication assessment	x				x		x	x		x	x	x
Hygiene	x	x	x							x		x
Human nutrition				x	x	x		x		x	x	x
Livelihood	x	x		x		x		x	x	x	x	x