

PARTICIPATORY ACTION RESEARCH ON AVIAN FLU COMMUNICATION: SUMMARY REPORT AND RECOMMENDATIONS

The AED Research Team

Seasonal calendar – Burkina Faso



Community Mapping - Lagos



Force field analysis - Kano



Community Mapping - Burkina Faso



Academy for Educational Development



ACKNOWLEDGEMENTS

Our sincere thanks and appreciation to all the community members in Burkina Faso, Kano and Lagos States who participated in the PAR exercises and in the restitution meetings as well as to the administrative authorities in Burkina Faso and Nigeria and the UNICEF country offices for their support in organizing field work. Finally, our gratitude to Neil Ford; without his vision, guidance and support this work would not have been started or achieved fruition.



Academy for Educational Development

Academy for Educational Development
1825 Connecticut Avenue, NW
Washington, DC 20009-5721
USA
Tel: 202-884-8000
Fax: 202-884-8400
www.aed.org



United Nations Children's Fund
3 United Nations Plaza
New York, NY 10017
USA
Tel: 212-326-7554
Fax: 212-303-7924
www.unicef.org

TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
BACKGROUND/	13
PURPOSE OF THE STUDY	13
METHODS	14
RESEARCH TEAM	14
SITE SELECTION.....	14
FIELD METHODS.....	15
RESULTS	17
COMMUNITY PROFILES	17
BASIC PATTERNS OF POULTRY-RAISING	19
OWNERSHIP/CARE	20
USES OF POULTRY	21
EXPERIENCE OF AVIAN INFLUENZA	22
EXPERIENCED AND PERCEIVED EFFECTS.....	23
CHICKEN MORTALITY AND THE PRICE OF CHICKEN	23
CONSUMPTION OF CHICKEN	24
RITUAL AND HEALING USES	25
GIFTS.....	25
KNOWLEDGE ABOUT AI.....	25
RISK OF AI FOR HUMANS	26
COMMUNITY REFLECTION ON CONSEQUENCES OF WIDESPREAD AI AND HUMAN PANDEMIC INFLUENZA	27
WIDESPREAD AI.....	27
HUMAN PANDEMIC INFLUENZA	27
KEY GENERAL FINDINGS.....	28
DISCUSSION – IMPLICATIONS OF THE PAR RESULTS FOR COMMUNICATION	29
IMPLICATIONS OF THE PAR FOR “REPORT, SEPARATE, WASH, COOK”	29
IMPLICATIONS FOR SELECTION OF CHANNELS: SUPPORT FOR USING A MIX OF MASS MEDIA AND INTERPERSONAL CHANNELS	36
RECOMMENDATIONS FOR COMMUNICATION: OVERALL STRATEGY	37
LOOKING TOWARD THE FUTURE: IMPLEMENTING PAR AT SCALE.....	39
APPROACH.....	41
CHALLENGES.....	42
COST	42
ADDRESSING THE ISSUE OF TECHNICAL CAPACITY	43
NEXT STEPS.....	43
INTEGRATING AVIAN FLU COMMUNICATION INTO BROADER CHILD SURVIVAL STRATEGIES	45
ANNEX 1: RESEARCH TEAM MEMBERS	46
ANNEX 2: RESEARCH THEMES.....	48
ANNEX 3: DESCRIPTION OF RESEARCH METHODS USED	50
ANNEX 4: POSSIBLE PAR RESOURCES.....	53
ANNEX 5: METHODOLOGIC ISSUES.....	55

TABLES

1. PAR locations.....	14
2. Data collection schedule	16
3. Sources of information for key research themes explored during the PAR	17
4. Profiles of the communities where PAR activities took place.....	17
5. Modes of rearing chickens	20
6. PAR results related to enabling factors for behavioral interventions identified by UNICEF/FAO/WHO.....	34

BOXES

1. Applying PAR at Scale to inform communication interventions	41
--	----

EXECUTIVE SUMMARY

Communities in Western and Central Africa face a real threat of avian influenza (AI). Within the coordinated UN response to avian influenza, UNICEF is responsible for behavior and social change communication. It must therefore determine the community-level communication strategies that are most likely to stimulate change to reduce the negative impact of AI within the livelihood systems and cultural practices of West and Central Africa. This mandate applies not only to the current situation of continuing sporadic outbreaks, but also to the possible circumstances of widespread AI and pandemic human influenza.

Effective communication and mobilization interventions are based on solid knowledge of the problem within a specific context. UNICEF contracted the Academy for Educational Development (AED) to carry out community-based participatory action research (PAR) on AI, including how communities identify problems and determine appropriate courses of action. The PAR approach involves local research teams working with communities to assess the local situation and define appropriate solutions. In October-November 2006 AED implemented PAR in six communities--one urban/periurban community and one rural community in three locations: Burkina Faso plus Lagos State and Kano State in Nigeria.

KEY FINDINGS

The key outcome of the PAR is our improved understanding of the role of chickens in the lives of communities in Burkina Faso and Nigeria. Six key findings emerged from the research:

- **Chickens are more important for food security than they are for food.** For example, in Burkina Faso families use income from selling chickens to purchase foodstuffs, especially grain, and to purchase seed and agricultural implements at the beginning of the planting season.
- **Chickens play a critical role in rituals and social ceremonies.** People do not identify possible alternatives to poultry in religious and other cultural practices. Reminding people that AI can threaten their ceremonies may motivate them to engage in preventive behaviors. Other motivators include concern for health, especially health of children, loss of livelihood, and, in Burkina Faso, community solidarity.
- **Community knowledge about how AI is transmitted is low.** Community members have many different ideas about the source of AI infection.

- **Some of the recommended behavioral interventions – “Report, Separate, Wash, and Cook” – are not feasible in communities where enabling factors are absent.** The PAR confirmed the difficulty of changing practices to prevent and control AI in poultry. Reducing human exposure to infection will also be challenging, especially if people are unaware of the risks.
- **Strategic use of a mix of mass media and interpersonal channels will be most successful in reaching people and persuading them to change behaviors.** Mass media messages can quickly reach large numbers of people but must be realistic and practicable in the local context. They also need to be complemented by interpersonal communication from trusted sources in the community.

RECOMMENDATIONS FOR COMMUNICATION: OVERALL STRATEGY

- Start large-scale communication programs with participatory research a) to determine the feasibility of changing behaviors given the social, economic and cultural context and b) to identify the concerns in communities that might provide motivations for changing behaviors. Results of the research will help design messages that are persuasive and promote actions that are “do-able” at the community level. Many of the global messages that have been developed for preventing and responding to avian flu are not practicable for backyard producers in West and Central Africa.
- Use a mix of mass media and interpersonal channels, drawing on the strengths of each, to promote changes in behaviors that are feasible and likely to reduce transmission among birds and from birds to humans. For example, mass media quickly reaches large numbers of people with straightforward information; supplementing it with large-scale interpersonal communication gives people an opportunity to discuss proposed actions, and can build their resolve for changing behaviors and for adapting livelihood systems.
- Through mass and/or community-based media, such as theatre for development and rural radio, remind people to improve behaviors that many are already practicing:
 - Remind people to wash hands with soap before and after handling birds or getting bird feces on hands
 - Remind people to eat only well-cooked meat and eggs
 - Remind people to burn dead birds or to bury them

- Use mass media and/or community based media to present information about how AI is spread from infected to healthy birds and tell people that one way of keeping their flocks healthy is by keeping new birds separate for two weeks.
- Complement these messages with interpersonal communication from trusted sources on animal and human health (e.g., use veterinarians to reach commercial and semi-commercial breeders; extension workers and traditional leaders to reach backyard flock owners) to discuss how this could be done (for example, the type of cage to use for temporary quarantine)
- Engage traditional practitioners in discussions about the dangers related to sacrificing chickens and how the risk might be reduced.
- For complex behaviors, facilitate dialogue so that solutions come from producers themselves. Consider developing “community discussion guides” for extension workers to start community dialogues about
 - How infection is transmitted among birds
 - Ways to keep community birds safe:
 - Washing hands, feet and equipment that have come in contact with feces before bringing them into their own household area (and possibly before bringing them into the village or neighborhood).
 - Burying/burning dead chickens where they cannot be retrieved by animals
 - Agreeing to report unusual numbers of sick or dead birds to the authorities, stop movement of poultry in or out of the neighborhood, and cull birds as recommended
 - How infection can be transmitted from birds to humans
 - Ways to keep members of the community safe:
 - Safe slaughter practices
 - Safe cleaning of hen houses
 - Bringing someone who is sick and who was around sick or dead birds to see a health provider within two days of getting sick
- Advocate for improved policies. Advocacy efforts should focus on
 - Developing a fair compensation policy (one that takes into account ownership of birds by women and children and backyard as well as commercial farmers), with a clear rationale for compensation rates and a clear process for obtaining compensation. Once a policy is developed, ensure that it is clearly communicated to priority groups.
 - Developing a surveillance system that provides a rapid response to reports, clear guidelines about steps to be taken, and quick and fair compensation for birds that are culled. Ensure that the system taps into motivations for reporting that resonate with communities.

- Supporting producers who are willing to change their livelihood system in order to make it safer from avian flu, for example, by providing subsidies for improved bio-security systems
- Encouraging transparency

PAR FINDINGS AND SPECIFIC RECOMMENDATIONS REGARDING COMMUNICATION ABOUT “REPORT, SEPARATE, WASH, AND COOK”

The PAR provided insights that will enhance communication efforts to reduce the risk of AI. In March 2006 WHO, FAO, and UNICEF published a set of recommendations for interventions related to four clusters of behaviors: “Report, Separate, Wash, and Cook”. The recommended behaviors, barriers to their adoption as identified in the PAR, and implications for communication interventions are summarized below.

REPORTING BEHAVIORS

Recommended behaviors: Report unusual sickness/death among poultry, wild birds and other animals immediately to the authorities; report and seek treatment immediately if you have fever after contact with sick birds.

Barriers to change:

- Failure to recognize AI during the first outbreaks
- Lack of a surveillance system and confused or delayed response to reports or sampling
- Mistrust of authorities (in Nigeria)
- Problems with compensation: 1) delayed, 2) smaller than farmers think necessary, or 3) paid only for culled birds and not for all birds that die during a flu outbreak

Communication implications: At first many people failed to recognize AI and thought that mortality was caused by “normal” seasonal flu. Provision of continuing information about outbreaks has helped correct this misperception. In Nigeria reluctance to acknowledge AI as a new disease was linked to mistrust of government and the wealthy, probably exacerbated by the perception of unfair distribution of compensation (with commercial farmers more likely to get compensation). Failure to address mistrust may, in turn, reinforce suspicions. It will be difficult for communications interventions to address this issue in the short term; only continuing transparency on the part of officials and the system can do so.

The barriers associated with compensation can be addressed in two ways: first, by advocacy to authorities for a well-thought out, fair and timely compensation policy; and second, by providing farmers with information through interpersonal and mass media channels about the process and rationale for compensation rates. Two-way communication between farmers and the authorities to establish a compensation policy would be even more helpful in reducing this barrier. Finally, the PAR suggested that more attention has to be paid to complex issues of ownership and management of chickens so that women's (and to a smaller extent) children's losses are acknowledged and addressed.

SEPARATING BEHAVIORS

Recommended behaviors: Keep new stock apart from the rest of the flock for two weeks, keep poultry away from wild birds, separate species, keep poultry away from living areas; keep poultry away from children, burn/bury dead birds safely

Barriers to change: Of the four sets of behaviors, the separation ones are likely the most difficult to change. Barriers include:

- Widespread custom of allowing backyard chickens to roam free
- Expense of caging and related cost of feeding birds that are not free to scavenge
- Lack of awareness that enclosing chickens may protect them from AI
- Food insecurity

Communication implications: Communication that focuses on how AI is spread through neighborhoods might help people understand the importance of enclosing birds. Keeping new stock apart for two weeks is the most feasible of the separation behaviors to change because it is temporary and involves little cost.

In contrast, the PAR revealed that keeping children away from chickens may not be a behavior amenable to any simple communication intervention. For example, in Burkina Faso, people believe that the only way they can deter thieves is to build chicken houses with very small doors. As a result, only young children can get inside to clean the chicken houses. In this situation, the issues of thievery and the construction of chicken houses must be addressed in order to separate children from chickens.

The last separation behavior—disposing of dead birds by burying or burning them—is linked to food security issues, a relationship identified by WHO, FAO, and UNICEF and confirmed by the PAR. Most people stopped eating chicken and buried dead birds during the outbreak; but some of the really poor ate birds that had died. Communication in the form of advocacy to address the underlying issue of food insecurity is an essential part of long-term efforts to address this problem.

In the short term, communication interventions could be used to address a related problem revealed by the PAR. In some cases, people killed and ate (or sold) chickens from infected flocks as a way of recovering some of their investment in the birds. Where AI is still relatively rare, that is, occurs in small outbreaks, it is reasonable to warn people not to do this, explaining that there is a higher risk of getting infected by slaughtering, preparing and eating birds from these flocks than from uninfected flocks. However, in cases where AI is more common or where birds can be infected without dying (as is the case with ducks in Southeast Asia), unless people stop eating poultry completely the relevant information will be how to slaughter and prepare birds safely.

WASHING BEHAVIORS

Recommended behaviors: Wash hands with running water and soap (or ash if soap is not available) often, especially after touching birds and before and after food preparation. Clean clothes, footwear, vehicles and cages with soap or disinfectant.

Barriers to change:

- Habit of not using soap (possibly related to expense)
- Lack of awareness of possible contamination

Communication implications: The PAR did not suggest any ways to persuade people that simple handling of birds might be contaminating. In Burkina Faso the community explained that the reason for washing with water is because their hands smell bad (e.g., after touching blood or feces) or feel bad (e.g., after slaughtering birds). Communications interventions that reinforced this behavior and encouraged the use of soap (perhaps by emphasizing how hands smell better after they are washed, especially with soap, so “wash often”) could improve the frequency of hand washing.

COOKING BEHAVIORS

Recommended behaviors: Handle, prepare and consume poultry safely

Motivator to change: Many people stopped eating chicken during the outbreaks, indicating that they are worried about infection.

Barriers to change:

- Habit of not using mask or gloves when slaughtering
- Lack of awareness of possible contamination

Communication implications: It may be possible to build on people’s concern about getting AI from eating chicken to raise awareness about the possibility of getting it

from slaughtering and preparing chicken. Other cooking behaviors may also be amenable to communication interventions. For example, efforts focused on children and traditional practitioners, the two groups most likely to eat undercooked chicken, are likely to be effective in reducing exposure to possible AI infection.

RECOMMENDATIONS FOR COMMUNICATION CHANNELS AND CHANNEL MIX

PAR results strongly support strategic use of a mix of mass media and interpersonal channels, drawing on the strengths of each.

- Mass media should be used to quickly reach large numbers of people with straightforward information or to remind people about more complex behaviors.
- Mass media is most effective when it is based on issues and levels of understanding that are determined through dialogue with communities.
- Interpersonal media complements mass media; it is more persuasive, because it is grounded in trust, acceptance and dialogue.
- The PAR revealed the best interpersonal channels:
 - For semi-commercial and commercial farmers – veterinarians and experienced farmers
 - For backyard producers and the general population – local leaders and traditional healers
 - To prepare communities for widespread AI or human pandemic – religious leaders and local authorities.

Reason for the recommendation: In both Nigeria and Burkina Faso radio and TV were the preferred channels used in the early stages of the outbreaks to convey information to the public about controlling the spread of the disease, including announcing the public health measures required. However, these efforts were met with limited success as doubts and skepticism mounted among the poultry raisers and the population at large, fueled in part by speculation and news about the outbreaks circulated on radio and TV. Acceptance and compliance with the suggested measures were achieved when interpersonal channels of communication (the Professional Poultry Farmers Association's roving theater in Nigeria and traditional village leaders and traditional healers in Burkina Faso) were called upon to disseminate information.

RECOMMENDATIONS CONCERNING THE FURTHER USE OF PAR

This study confirmed the usefulness of the PAR approach as a method of rapidly obtaining a rich, wide understanding of issues. PAR results are contextualized, so they provide an excellent basis for identifying messages and message framing that “work”. Communities that participate in the research are activated; they assess what they might do to prevent infection of their birds and themselves and start to grapple with issues and organize responses that “top-down” interventions might not stimulate.

Because PAR can meet the dual objectives of providing input for effective message development and activating communities it is particularly appropriate for informing communication efforts that combine the wide reach of “messaging” approaches with interpersonally-based “dialogue” approaches.

The research team recommends that UNICEF and others consider implementing PAR on a wider scale, not only for expanding the knowledge base of insights about AI, but about other topics such as child and maternal survival as well. Constraints of time, money and availability of technical expertise could be addressed by building a local network of PAR practitioners, based on existing local networks, and improving capacity by providing practitioners with orientation about the topic(s), a reference tool kit and coaching – all provided by a local center of excellence. In addition, the team recommends that UNICEF investigate the possibility of training community agents to use an abbreviated PAR process to initiate dialogue with communities.

INTEGRATING AVIAN FLU COMMUNICATION INTO BROADER CHILD SURVIVAL STRATEGIES

Special issues such as avian flu should not distract donors, health leaders and communities from addressing long-standing health issues. Avian flu can be successfully integrated into a broader approach. Interventions to prevent and control AI in humans overlap substantially with those of four child health issues: hygiene, diarrheal disease, nutrition and respiratory disease. Recognizing this overlap and the advantages of integrating avian flu into a broad approach will bring it to the center of UNICEF's work in West and Central Africa, which is improving child survival in the region of the world where infant and maternal survival is amongst the worst in the world.

BACKGROUND

PURPOSE OF THE STUDY

Communities in Western and Central Africa face a real threat of avian influenza (AI). Since February 2006, Burkina Faso, Cameroon, Cote d'Ivoire, Niger, and Nigeria have reported outbreaks of AI in birds and in January 2007 there was a confirmed human death from H5N1 in Nigeria, where there are continuing sporadic outbreaks.

As part of an overall strategy for addressing AI, UNICEF is interested in developing communication and community mobilization interventions that can reduce the negative impact of AI in three sets of circumstances: continuing AI outbreaks, widespread AI, and pandemic human influenza. As effective communication and mobilization interventions are based on a solid knowledge of the problem in context, including how communities identify problems and determine appropriate courses of actions, UNICEF partnered with AED to carry out community-based participatory action research.

To date, there is little documented information about the social, cultural, and economic implications of each of these scenarios for communities in Western and Central Africa. It is important to understand how multiple aspects of the lives of communities, such as health and subsistence livelihoods, may be affected by AI. Because AI affects many aspects of society (e.g., human health, animal health, livelihood), it is necessary to adopt a broad perspective on how communities may react and respond and assess community needs and resources.

We sought to learn about these topics using participatory action research (PAR). This approach involves local research teams working with communities to assess the local situation and define appropriate solutions. The PAR offered an opportunity for communities to exchange ideas about AI and discuss courses of action, and a way for researchers and communities to share insights about the communities' perspective and about the feasibility of possible interventions.

In sum, the objective of this activity was to identify and appreciate:

- a) the perception of community members about the potential impact of AI on different aspects of their life. We paid particular attention to gender and intergenerational differences.
- b) relationships and connections between the spread of AI in the community and social, cultural and economic factors, especially those that might facilitate or hinder communities from mobilizing resources or changing practices to prevent or reduce the negative impact of AI;

c) communication resources, focusing especially on interpersonal communication, that could be mobilized and feasible interventions that could be implemented using local resources.

METHODS

RESEARCH TEAM

The field work was carried out by two groups of social science researchers, one in Burkina Faso and one in Nigeria (See Annex 1 for a list of research team members). While the team leaders and the field coordinators had previous PAR experience, and all of the team members had previous experience doing qualitative research in community settings, some team members had no PAR experience. AED staff spent one week with the research teams in each country. During this period a staff member provided refresher training in the techniques that would be used, oriented team members about AI and introduced the research themes (see Annex 2) and observed team members applying the techniques in a nearby community.

SITE SELECTION

Data collection was carried out in a total of six sites: one urban and one rural site in three places, Burkina Faso, Lagos State and Kano State. The sites were chosen because there had been AI outbreaks either in or near the community (Burkina Faso) or in the State (Nigeria).

Table 1: PAR Locations

	Urban	Rural
Burkina Faso	Gampela	Ténado
Kano State, Nigeria	Limawa	Jogana
Lagos State, Nigeria	Iba	Ajara Topa

It must be noted that both the urban and rural sites in Burkina Faso were “rural” in comparison with the urban site in Kano, that is, most of the community members were farmers. Similarly, both of the sites in Lagos were “urban” compared with the Kano rural site. Even in the rural site in Lagos few community members were primarily farmers; most earned their livelihood through trades such as bricklaying or bus driving; there were even a few civil servants.

FIELD METHODS

Field work was carried out in October-November 2006. According to standard practice, the teams involved community members in all phases of the research, including as co-researchers. These community facilitators (3 per site) were selected by the community leaders; selection criteria included being credible and well-respected and able to participate. In addition, communities were requested to be mindful of gender balance and asked to select people who could talk with all ages (operationally, this meant adults 25-45 years old).



Casual flow diagramming, women, Kano

Teams spent 9 days in the field in each setting, with 2 days devoted to introduction to the community and identification of community facilitators (done in a preliminary visit) and 7 days for data collection and feedback. Analysis of information from the site took 3 days, and synthesis of information from rural and urban sites took an additional 2. Table 2 shows a typical data collection schedule. The same overall process was followed in each site – data collection with the community using specific methods,

followed by review and discussion of the findings in the evening, leading to plans for activities the following day. Because team leaders, in consultation with team members, used their discretion in selecting the methods to be used the following day, the exact sequence of methods used was slightly different in each site. Annex 3 contains brief descriptions of each of the methods used and what was learned from each.

Table 2: Data collection schedule

Day	Activity
1	Team building Orientation training for community facilitators, exercises, and role plays
2	Community mapping (Men, Women, Youths) Transect walk in the community Feedback, data review, planning
3	Participants' observation in the community Seasonal calendar (M,W,Y) Feedback, data review, planning
4	Focus group discussion Feedback, data review, planning
5	In-depth interviews with, e.g., poultry sellers, producers, community leaders (including youth and women leaders) Bean quantification and Venn diagram (M,W,Y) Feedback, data review, planning
6	Causal flow diagramming (M,W,Y), Preference matrix ranking (M,W,Y) Story telling (M,W,Y) and Force-field analysis Exercises carried out (M,W,Y) Data review Preparation for restitution
7	Restitution with community Presentations of the findings and the action plan Questions, comments and corrections

The last day in each site was spent reviewing overall findings with the community and discussing their ideas about measures they could take to address the identified problems.

After teams finished data collection in both the urban and rural sites, they spent three days reviewing and further analyzing the information they had collected. In Nigeria, there was a further step, during which teams who had worked in Kano and Lagos States discussed and further analyzed and synthesized their results. The country-level analyses were led by AED staff members.

The primary analytic approach used at each level of analysis was triangulation – comparison of results obtained using different methods. Table 3 shows the sources of information for each of the research themes.

Table 3: Sources of information for key research themes explored during the PAR

Research Themes	Community Mapping	Transect Walks	Participant Observation	Flow Diagrams	Seasonal Calendars	Venn Diagram	Bean Quantification	Story telling	Force-field Analysis	Focus Group s	In-depth Interviews	Matrix Ranking
Poultry coming into the household	X	X		X	X					X	X	
Care for poultry in the household		X			X	X				X	X	X
Use of the poultry	X	X		X	X		X			X	X	X
Seasonal variations					X					X	X	
Human health, especially the health of children				X	X			X		X	X	
Communication assessment	X					X		X	X	X	X	X

RESULTS

COMMUNITY PROFILES

The six communities involved in the PAR provide a range of situations (Table 4). Both of the sites in Burkina Faso are predominantly agrarian, while both in Lagos State are predominantly non-agrarian, and both in Kano State are market centers for poultry.

Table 4: Profiles of the communities where PAR activities took place

Burkina Faso
<i>Rural</i>
Ténado is a rural community with a population of about 14,000 (1996), situated about 150 kms west of Ouagadougou on national highway N°14, the only road in the area that is accessible year round. It is directed by a municipal council (one of 19 villages and neighborhoods under the council). The 2004-5 school attendance rate was 33% for girls and 41% for boys.

COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

<p>Farming (of grains) is the major occupation of 95% of the population; most farmers also raise animals, including cows, goats, sheep, pigs and poultry (chickens, guinea fowl and a few turkeys and ducks). In 2000 a census of the Department showed poultry population of 35,000, while the 2005 census estimated 123,013. Newcastle disease occurs year round.</p> <p>There is one health post, with four staff (a nurse, a health assistant and 2 extension workers).</p>
<p><i>Urban</i></p>
<p>Gampela, a village of 1650, is situated 17 kms east of Ouagadougou. It has a primary school and an adult literacy center. It also has a health post that is not functioning for lack of staff and equipment; sick people go to Lomila and Nioko II. There are 9 dams, five wells (polluted from tannery effluent). Seasonal agriculture is the major occupation; farmers also raise animals – cows, sheep, donkeys (600 in the village), pigs and poultry (numbers as of 2004). Animal raising is the major income-generating activity of women in the village.</p>
<p>Kano</p>
<p><i>Rural</i></p>
<p>Jogana town is about 15 kilometers from Kano, on the Kano-Hadejia highway. It is an old railway settlement which supplies poultry to the capital. Farmers and poultry collectors bring chickens from neighboring villages to Yan-Jogo market, and then catch commuter buses to Kano.</p>
<p><i>Urban</i></p>
<p>Limawa is a community within Hotoro ward in Kano metropolis; it lies 2 kilometers from the government house along Kano-Maiduguri Road. It has a population of about 4000, and includes a large settlement of government quarters, including Central Bank of Nigeria quarters, Kano Mobile Police Quarter and State Government Official quarters. It has a concentration of commercial poultry farmers, most of whom reside in these government quarters. Tarauni market, patronised by Limawa community, lies about one kilometer west of Limawa towards the state government house. The market is popular for poultry trading in both live and dressed form. The majority of the community members are traders.</p>
<p>Lagos</p>
<p><i>Rural</i></p>
<p>Ajara Topa community is a rural dwelling of Egun people situated at the northeast of Badagry town, not far from the expressway leading to the Republic of Benin. The Badagry LG secretariat is situated in the community. The community also has a town hall, 1 community health post, private hospitals, a banking hall, two hotels and one guest house, churches, mosques, shopping malls, lock up shops, schools, an agricultural settlement where there are rural poultry farmers. 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. The community is primarily Christian, but people also still practice the traditional worship of their different gods. 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.</p>

<i>Urban</i>	<p>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 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.</p>
--------------	---

BASIC PATTERNS OF POULTRY-RAISING

In all sites in both Nigeria and Kano most people of all socioeconomic classes keep flocks of backyard chickens. These backyard flocks are usually small (<20 birds) and consist mainly of local breeds of chickens that are allowed to roam freely, scavenging for food. These free-range birds move from the owners' compound to the streets, associating with chickens from other households as well as with other types of birds (e.g., ducks, pigeons, wild birds), drinking from available sources of water that are often polluted, and free to eating from rubbish tips and household waste. Their interaction with people is also high; for example, they are allowed in houses and can be observed scavenging close to food sellers. Chicken droppings are ubiquitous.

Some people in each site keep semi-commercial and commercial flocks of "foreign" breed chickens. In Nigeria, the team identified four modes of rearing chickens (Table 5).

Table 5: Modes of rearing chickens

Mode	Characteristics
Free-range	1-20 chickens Most of the chickens raised at this level are local birds, though raisers at times buy foreign breeds. Stock are obtained from professional poultry farmers Not fed by household; the birds are free to move around and search for their food. In Lagos sites, raised for family consumption, and gifts. In Kano sites, raised primarily for income and rarely consumed. Raised mainly by low-income earners
Small Scale (backyard poultry)	20 – 50 chickens Mainly “foreign birds” – “Agric” Kept in cages or enclosures within the household (deep litter system). The raiser provides them with food and water and cleans out their waste. In both Kano and Lagos sites raised for family consumption and for sale; raisers may or may not have other means of gaining income
Large Scale (Backyard)	500 or more chickens “Foreign birds” Kept in battery cages. The raiser is responsible for their feeding, medication and care. Raised for business; raiser expects to make a profit; raiser has invested money and is unlikely to do anything else; may employ some workers.
Semi-Commercial	1,000 or more chickens “Foreign birds” Raised for business; raiser expects to make a profit; has invested money and is unlikely to do anything else. Kept in battery cages; raiser is responsible for their feeding, medication and care; employs many workers

OWNERSHIP/CARE

In Burkina Faso, household chickens belong to the husband. Even when women and children have purchased or raised them, the head of household can dispose of their poultry without consulting them. Husbands take the primary responsibility for managing the farm and household poultry, occupying themselves with feeding, providing them with water and caring for them. However, in rural Burkina Faso, cleaning chicken houses is the exclusive responsibility of children 6-8 years old. Chicken houses there have very small doors to prevent theft, so only young children are small enough to get in to remove manure and used bedding.

In Nigeria, anyone in the community – men, women, even children - can buy and own backyard chickens, but endorsement of the husband is needed before consuming or disposing of chickens. If the husband is dead or absent, mothers can

make decisions; children must defer to their parents and cannot take decisions on their own on giving out chickens they own.

In Nigeria, women and children manage backyard flocks, feeding, watering and cleaning the chicken coops. In the Kano rural site, the community also mentioned that women are responsible for identifying sick chickens and administering drugs acquired from the veterinary chemist. In both sites in Nigeria, men manage commercial flocks, usually with the help of hired labor. Some small (semi)-commercial flocks are household enterprises, with women and children essentially working for the husband.

In all sites those who raise chickens semi-commercially or commercially are more likely to seek outside help when chickens are sick than those with small flocks, for whom the cost of a consultation would be greater than the value of the birds.

USES OF POULTRY



Chickens and dias in close contact.

Those who raise poultry commercially or semi-commercially do so for the income, which can be either the household's main source of income, or a source of supplemental income, for example for retired civil servants in the Lagos urban site.

In all sites community members use backyard poultry in four ways: as a source of income, for home consumption; in rituals, and as gifts. The relative importance of these different uses varies by location and socioeconomic class.

Among poorer people, especially those with no outside source of income (i.e., in Burkina Faso and Kano rural sites), home consumption of meat and eggs is limited, occurring most frequently in association with celebrations such as Christmas, New Year, and Id-ul-Fitr and at feasts on social occasions such as weddings. For this group, the backyard flock represents a kind of savings; chickens are sold to get money for school fees, seeds and agricultural equipment, health care and foodstuffs. While chickens are sold throughout the year, their association with specific festivities and as sources of income for school fees and agricultural needs means that sales

are greater during certain parts of the year. Those who are better off do not need to sell their backyard chickens to have ready cash; they can also afford to eat chicken and eggs more frequently.

A very important use of chicken for both rich and poor in Burkina Faso and Lagos is in rituals. As one community member in the rural Burkina Faso site explained:

Without chickens we would not be able to keep our customs. For example, when someone dies it is necessary to kill a chicken before or after burial. It's the same for Christians and animists. Similarly, chickens are necessary for marriages. For many other things in our village, even if you have millions of francs to spend, it doesn't matter, what matters is the chicken and it's tradition that requires it.

Giving chickens to friends and relatives as gifts on festive occasions is traditional in all sites, but more common in rural than urban communities in Nigeria. In addition, community members in the Kano rural site mentioned that giving chickens as gifts has become less common “as a result of the mounting poverty, which makes chicken more valuable.”

EXPERIENCE OF AVIAN INFLUENZA

Both communities in Burkina Faso had direct experience of the effects of AI. Ténado (rural site) experienced an outbreak of AI in March with high mortality of chickens. In addition, youths remarked that wild birds (vultures and crows) were dying. By the time the outbreak was declared (in May) chickens had stopped dying in the village. Nonetheless, the authorities began preventive culling, although many in the community doubted that it was necessary. Because of this some farmers killed their own chickens to eat, while other refused to let the culling teams in their compounds. The authorities had to involve the village chief and the préfet (government-appointed administrator) to obtain the community's consent to the culling. The community received compensation (1000 CFA per chicken, 1200 CFA per guinea fowl, 5000 CFA per turkey and 25 CFA per egg). Chicken houses were disinfected and the authorities imposed movement controls on birds entering and leaving the village. By the time of the PAR, the community had restocked, and people had chickens again.

Gampela, the urban site, was within 3 kilometers of an outbreak reported in April, so all the community's scavenging chickens were culled, even though their birds were not dying. The community was reluctant to accept culling, but did so after explanations from the administrators and intervention of former village residents currently living in Ouagadougou who had some understanding about AI. In compensation, they received 1500 CFA per chicken and 25 CFA per egg. By the time of the PAR the community had restocked.

In Nigeria, poultry raisers in Ajara Topo, the rural site near Lagos, learned of AI when egg retailers from Badagry, who normally take eggs to the Nigeria – Benin border for sale, were denied access into Benin, and had their eggs destroyed. After that, they noticed that their birds were dying at a higher rate and more quickly than normal for seasonal flu. However, the outbreak was not declared to be H5N1, and culling was not carried out.

The other communities learned about AI outbreaks mainly through the radio (all communities, either local radio, or, especially for youths, the BBC), TV (primarily urban communities) or through word of mouth.

EXPERIENCED AND PERCEIVED EFFECTS

CHICKEN MORTALITY AND THE PRICE OF CHICKEN

Although only the Burkina rural site had experienced a recognized outbreak of AI, most community members in all sites, even those who believed that AI is not a new disease, knew that AI caused rapid, high mortality among chickens.

Apart from high mortality of chickens in affected communities, the most dramatic effect of outbreaks of AI was a steep fall in the price of chicken. In the immediate term, this was a boon for those who ordinarily could not afford to buy chicken (see below), and in Lagos communities reported that some youth and men took advantage of price differentials to make money, buying chicken cheaply and selling it where prices had not yet fallen. In the slightly longer term, the fall in prices forced some small commercial establishments in Nigeria out of business and resulted in others laying off hired laborers. Others involved in poultry processing or marketing (e.g., in both Kano sites) also lost income.

In Burkina Faso, those whose chickens were culled received compensation. Affected farmers in communities in Lagos said that they did not receive the promised N250. In Kano State, compensation was given – more frequently to commercial than backyard farmers – but was delayed and thought to be small relative to the before-outbreak price of birds.

CONSUMPTION OF CHICKEN



Commercial poultry farm, Lagos

In all sites one reaction to outbreaks of AI was that people stopped eating chicken and eggs because they heard that AI could kill humans. This behavior contrasts with practices before AI: in many places people slaughter and eat or sell chickens that are dying from “seasonal flu” (Newcastle), which does not affect humans. In some places a few people – especially the poor, but for religious reasons, rarely Muslims – also were used to eating birds that had died.

During AI outbreaks, those who could afford alternate sources of protein – fish or beef - frequently stopped eating chicken and eggs altogether. In contrast, some poor members of communities in Nigeria took advantage of the lower prices of chicken to eat it more frequently; and there were some reports of people slaughtering and consuming chickens that were dying, or even of preparing and eating (or selling) birds that had died.

In Nigeria the question of whether chicken was safe to eat was confused by contradictory information. In February, when people were informed about AI outbreaks in Lagos and on large-scale farms in Kano and in rural communities, many also heard that eating chicken was unsafe. People in all sites in Nigeria reported being scared by this first set of radio announcements, although no one could recall the exact message heard over the radio. Subsequent announcements minimized the threat and encouraged the consumption of chicken; communities in both Lagos and Kano recall being told “...wash chicken thoroughly, boil for a long time, and fry very well before eating”. In addition, the Poultry Farmer Association held rallies at different locations, where members of the association held discussion on AI, killed chicken, cooked, fried, roasted it and ate it in the presence of people to convince them that chicken is safe for eating when it is well cooked (there were apparently no specific recommendations about precautions to take when slaughtering or preparing chicken). Reassured by the new set of messages, many resumed eating chicken.

RITUAL AND HEALING USES

The importance of rituals, including healing rituals, involving chickens was most clearly expressed by the Burkina Faso communities although we expect that Nigerian communities where rituals are important would suffer similar consequences.

During the period of time when the communities in Burkina Faso had no chickens (because they died from AI or had been culled) the villagers resorted to buying feathers from unaffected villages in order to be able to carry out sacrifices. The rituals in which the feathers were used were “provisional” – when chickens were restocked, traditional healers began requiring people to produce chickens for each feather used. The possibility of postponing sacrifices or of substitutes for chickens is almost unimaginable. Communities are convinced that without sacrifices involving feathers, people in the village would have died, and in fact that some in the village had died (though not of AI) because many of the families were not able to carry out sacrifices because they did not have birds.

GIFTS

Gifts of poultry are a common practice during special events and when visiting relatives. Such gifts contribute to maintaining good ties among members of the same clan as well as close friends. Lack of poultry may have long term serious detrimental effects on social stability and inter-relations between extended family members.

KNOWLEDGE ABOUT AI

In Burkina Faso, communities recognized avian influenza as a new disease. As might be expected, in these communities that had experienced AI people were particularly aware of the high and rapid mortality it causes among birds. Interestingly, youths in both the urban and rural sites remarked on the death of vultures and crows. People were also generally aware of the potential for humans to get AI, though most identified eating chicken as the route of transmission. Hardly anyone was aware of the dangers of handling sick or dead birds or feces.

In Nigeria, most people in both the Lagos and Kano sites believe that AI is a new disease, although in the Lagos rural site both men and women groups mentioned that some think that the very rich and big farmers or “the English” are trying to give an old disease a new name to harass and eliminate poor and small poultry farmers from rearing chickens. Youths in the Kano urban site, many of whom are chicken processors, believe that AI is not a new disease, but agreed that the recent outbreak

was unique, in that it was more deadly and easily spread to chickens and other birds. They also pointed out that the disease appeared to have affected egg laying chickens more than broilers, local chickens and cockerels. Recurrent themes in both Kano and Lagos are that AI mainly affects commercial (Agric) chickens, and that the disease comes from somewhere else – a foreign country, the south (for Kano) and the north (for Lagos).

In both Burkina Faso and Nigeria, most people were unsure about how AI is transmitted, and those who thought they knew or hypothesized offered a wide range of factors. In Burkina Faso many community members – men, women and youths - thought that AI was transmitted through wind and dust, as well as from migrating and wild birds and from poultry brought to the village from outside markets or other villages. Some also believed that birds could get it by drinking infected water, eating household waste, or by eating infected dead (wild) birds. In Nigeria, many think that AI is transmitted through the air, or is associated with changes in weather (especially to colder weather) or that it is brought by migratory birds. Women in both Lagos and Kano also offered explanations related to poultry husbandry: congestion of birds in the poultry houses, lack of cleanliness, improper feeding, or lack of medicine. Youth in rural Kano, who believed that AI is disease from Western countries, mentioned that it can be transmitted through feed, water and imported vaccines, or transmitted by day-old chicks from Southern Nigeria.

RISK OF AI FOR HUMANS

In Burkina Faso, people were aware of the potential for transmission from birds to humans, and of how AI differs in this respect from other poultry diseases. However, people were most aware of potential for transmission through eating infected birds. In fact, at the time of the PAR, about 8 months after the outbreak, many were still not eating chicken. It is important to note that people did not associate any specific risk with meat or eggs being undercooked. The research team noted that ritually sacrificed birds that are cooked and eaten on the spot are frequently not well-cooked, just because people do not take the time to do so.

People were also generally unaware of the risks of handling infected or dead birds or feces; these types of exposure were mentioned by only a few people in each site. When adults and children wash (usually without soap) after handling or slaughtering birds or handling bird feces, the primary motivation for doing so is because of the way hands smell or because of concern about avoiding respiratory illness linked with dust. No one mentioned changing clothes after cleaning or handling feces.

In Nigeria awareness of the risks of being in contact with poultry and eating chicken varied by socioeconomic status. Middle-income and well-off people were aware of the risks and avoided eating chicken or eggs although, similar to the situation in

Burkina Faso, they did not associate risk with how well cooked meat or eggs were. In contrast, poorer people either were not aware of the risk or discounted it in order to take advantage of food that they could not usually afford. In addition, a small group of people took advantage of the situation to make money.

COMMUNITY REFLECTION ON CONSEQUENCES OF WIDESPREAD AI AND HUMAN PANDEMIC INFLUENZA

WIDESPREAD AI

In all sites people anticipated that widespread AI would result in death of large numbers of birds, leading to complete wiping out of stocks. This would have a direct negative impact on owners of semi-commercial and commercial establishments, those who worked in those establishments and those whose work had anything to do with poultry – collectors, processors and those who sold birds in the market. Backyard farmers who sell birds from time to time would also be affected, as prices would fall. Because of this they would not be able to afford, for example, to buy grain or to pay for health care.

Regarding consumption of chicken, all anticipated that it would stop – either because chicken would be unavailable or because it would be unsafe. However, communities mentioned that there were other things to eat – fish and meat, although prices go up because there is more demand for them – and crops such as yams.

Because of large number of commercial poultry producers, communities in Nigeria expressed less concern about possible social and religious effects of AI than communities in Burkina Faso.

HUMAN PANDEMIC INFLUENZA

When asked to imagine possible consequences and coping mechanisms for a human pandemic, one community in Burkina Faso (Ténado – rural), referred to their experience with meningitis 13 years ago. They suggested that they could organize themselves for protection the same way: forbidding gatherings, including markets and putting the sick in quarantine in temporary housing constructed by community. To do this, they said they would want technical assistance to form a surveillance committee and train members about AI, and funding for bicycles for those doing the surveillance.

The urban community in Burkina Faso and the communities in Nigeria, with no historical reference, understood the question about a possible human pandemic to refer to a situation of greatly increased risk of bird to human transmission. Thus most of their suggestions focused on reducing contact between humans and chickens, for example, by enclosing chickens. Communities in Burkina Faso feared major disruption in their social and cultural fabric.

KEY GENERAL FINDINGS

The key outcome of the PAR is our improved understanding of the role of chickens in the lives of communities in Burkina Faso and Nigeria. Discussion in international development circles has focused on food security issues, primarily on chicken as one of the few sources of protein accessible to poor communities. The PAR showed that chickens are important for food security more generally; for example, in Burkina Faso one of the main uses of income from selling chickens is purchase of foodstuffs, especially grain, and another is to purchase seed and agricultural implements at the beginning of the planting season. The PAR also highlighted the critical role of chickens in rituals and their importance as a component of social ceremonies. When asked to imagine life without chickens, people could imagine substitutes for all functions except the rituals. Indeed, in the Burkina Faso villages that had experienced high mortality and culling, people resorted to using chicken feathers in rituals as markers of their intent to provide chickens when they once again became available.

The communities' understanding of AI revealed through the PAR is similar to that observed in SE Asia; many believe AI is a new disease, and even those who think it is not new recognize that recent outbreaks occur more rapidly and with higher mortality than previously. Knowledge about transmission mechanisms is low. The PAR also confirmed the difficulty of changing practices to prevent and control AI in poultry. Most families, even in urban settings, cannot afford to enclose their chickens. The cost of materials to create enclosures and especially of the feed that would have to be purchased is prohibitive.

Community members had many different ideas about the source of AI infection, which fall into five categories. Explanations involving weather, dust, and wind reflect the *season* in which birds usually fall ill (harmattan); those involving birds from outside, day-old chicks, commercial feed, commercial birds, vaccines reflect reports of *commercial outbreaks* (more noticeable than those in backyard scavenging flocks); wild or *migrating birds* was (and is) a common explanation for the appearance of AI in Burkina Faso and Nigeria when there were no outbreaks in neighboring countries; failure to practice good *poultry husbandry* – chickens kept in unhygienic or crowded circumstances, drinking dirty water or eating bad food; and

finally, heard only in Nigeria, *mistrust* of government/the rich/Western countries – belief that there was intentional infection or manipulation of perception with the purpose of wiping out a section of the poultry industry.

Attitudes about control of outbreaks differed. In Burkina Faso, communities understood the need for culling (although they resisted until administrators introduced the notion through the traditional information network, that is, by talking first with the head of the village). In contrast, compliance with culling was lower in Nigeria, perhaps because there is greater mistrust of government. None of the PAR teams explored the issue of who received compensation relative to ownership of chickens (recall that especially in Burkina Faso, but also in Nigeria, women and children may own chickens, but heads of households dispose of them; our impression is that compensation was given to heads of households) or what families did with the compensation they received. This is a topic that should be further investigated.

Reducing human exposure to infection will also be challenging. The PAR revealed how deeply embedded “undesirable” practices are in the local social situation. For example, in the rural community in Burkina Faso, reducing children’s exposure to possibly infected chicken feces will require solving the problem of theft of chickens. In addition, soap is not commonly used, and because chickens roam freely, avoiding contact with them and their feces is not an option.

DISCUSSION – IMPLICATIONS OF THE PAR RESULTS FOR COMMUNICATION

IMPLICATIONS OF THE PAR FOR “REPORT, SEPARATE, WASH, COOK”

In March 2006, UNICEF, FAO and WHO identified four sets of “highest priority key behaviors” for reducing animal to animal and animal to human transmission of avian influenza:

1. **Report.** *Report unusual sickness/death among poultry, wild birds and other animals immediately to the authorities; report and seek treatment immediately if you have fever after contact with sick birds.*
2. **Separate.** *Separate poultry 1) new stock kept apart for 2 weeks; 2) from wild birds; 3) from each other by species; 4) from living areas; 5) from children. Burn/bury dead birds safely.*

3. **Wash.** *Wash hands with running water and soap (or ash if soap is not available) often, especially after touching birds and before and after food preparation. Clean clothes, footwear, vehicles and cages with soap or disinfectant.*
4. **Cook.** *Handle, prepare and consume poultry safely.*

The summary of the meeting¹ also lists enabling factors for each behavior. Communication programs need to consider enabling factors because they can be barriers or conversely, factors that motivate individuals and communities to adopt desirable behaviors. The PAR results revealed that some of the recommended actions are not feasible for communities because these enabling factors are absent (Table 6, at the end of this section, summarizes the findings). The results also suggest ways that communications interventions might introduce behaviors so that people are more likely to adopt them.

For **reporting**, the PAR identified several factors that pose barriers to the communities' carrying out the recommended actions: lack of recognition of AI (Nigeria), lack of a surveillance system and confused or delayed response to reports or positive samples, mistrust of authorities (in Nigeria) and problems with the compensation system.

The problem of lack of recognition of AI (people thinking that the mortality was "normal" seasonal flu) has been overcome by continuing information about outbreaks. By the time the PAR was carried out, most people understood that sudden high mortality indicates AI, although there were still some people who continued to believe that what they were seeing were just particularly bad outbreaks of normal seasonal flu. In Nigeria this reluctance to acknowledge AI as a new disease was linked to mistrust of government and the wealthy, probably exacerbated by the perception of unfair distribution of compensation (with commercial farmers more likely to get compensation). It will be difficult for communications interventions to address the issue of mistrust in the short term; only continuing transparency on the part of officials and the system can do so. The barriers represented by compensation being delayed or smaller than farmers think necessary or paid only for birds that are culled and not all birds that die during a flu outbreak (either from the flu or from being culled) can be addressed in two ways: first, by advocacy to authorities for a well-thought out, fair and timely compensation policy; and second, by providing farmers with information about the process and rationale for compensation rates – this could be provided through both interpersonal and mass media channels.

¹ WHO/FAO/UNICEF adhoc Meeting on Behavioural Interventions for Avian Influenza Risk Reduction, 14-16 March 2006, Geneva, Summary and Recommendations. Available at: http://www.unicef.org/influenzaresources/files/WHO_FAO_Unicef_AI_March_2006_adhocsummaryreport.pdf

However, two-way communication between farmers and the authorities to establish a compensation policy would be even more helpful in reducing this barrier. Finally, the PAR in Burkina Faso suggested that community solidarity can be an important motivator; communications efforts should consider invoking it.

The PAR results indicate that **separating** is likely to be the most difficult set of behaviors to change. The most important barrier is the habit of letting backyard, local-breed chickens roam free, at least during the day, sharing the same space as the family and mingling with other species of poultry and with wild birds (related to behaviors 2, 3, 4 and 5 in the set). One of the factors contributing to this habit is the expense of caging, as is the cost of feeding birds that are not free to scavenge for their food - and for some, the belief that commercial feed could be a source of infection. Those who are better off or who keep large numbers of chickens do keep them enclosed, but the PAR in Nigeria revealed that some semi-commercial poultry raisers keep chickens in their houses. Also, those who clean the cages – frequently children and women – are at increased risk of exposure. (A behavior not included in the UNICEF/FAO/WHO list is using protective clothing – or at least masks and gloves – while cleaning). Finally, another factor that contributes to people continuing to let their birds roam free is lack of understanding that enclosing them might protect them from AI. People who believe that AI is borne on the wind or is related to seasons, and that birds get AI from dust or from bad care, such as poor food, dirty water or crowded conditions, are less likely to enclose them than those who think that AI might come from migrating birds or from ill birds. It is notable that in Nigeria most people talked about how outbreaks of AI first came to Nigeria, not how AI is spread from flock to flock. Communication that focuses on spread through neighborhoods might help people understand the importance of enclosing birds.

While enclosing chickens in cages outside of houses will help keep them away from children, the PAR revealed that one of the main ways children interact with chickens is cleaning cages and chicken houses. In Burkina Faso, the PAR showed that important barriers to separating children from chickens (behavior 5) are the fear of thieves and expense of strong doors for chicken houses, which have resulted in people building the houses with doors so small that only young children can get inside to clean them. In this situation, no communications intervention of any sort can change the behavior. First the issues of thievery and the construction of chicken houses must be addressed.

In contrast, one of the most feasible separation behaviors to change, because it is temporary, is keeping new stock apart for 2 weeks. People who believe that AI can be transmitted from birds brought from outside are most likely to do this. They may only need information or examples about how to do it.

The UNICEF/FAO/WHO document links the last separation behavior “disposing of dead birds by burying or burning them” to food security, a relationship confirmed by the PAR. Most people stopped eating chicken and buried dead birds during the

outbreak; but some of the really poor ate birds that died. Communication in the form of advocacy is an essential part of long-term efforts to address the problem of food insecurity; but in the short term communication interventions could be used to address a related problem revealed by the PAR, of people killing and eating (or selling) chickens from infected flocks before they can die. While AI is still relatively rare it is reasonable to warn people not to do this, explaining the higher risk of getting infected by slaughtering, preparing and eating birds from infected flocks than from uninfected flocks. However, in cases where AI is more common or regarding birds that have lower mortality from AI, such as ducks, the more relevant information may be how to slaughter and prepare birds safely (see “cooking”).

According to PAR results, communication could be helpful to change some of the **washing** behaviors. None of the communities talked about the unavailability of water. The barriers to washing hands after handling birds are the habit of not using soap (possibly related to expense) and lack of awareness about possible contamination – in situations where handling birds is commonplace, for example, when buying or selling them in the market, people just don’t think that they are dirty. Unfortunately, the PAR did not suggest any ways to persuade people that simple handling of birds might be contaminating. However, in Burkina Faso the community explained that the reason for washing is because hands smell (e.g., of blood or feces) or feel bad (e.g., after slaughtering birds). Communications interventions that reinforced and extended this behavior and encouraged people to use soap (say by emphasizing how hands smell better after they are washed, especially with soap, so “wash often”) could improve the frequency of hand washing.

Finally, the PAR results suggest that **cooking** behaviors may also be amenable to communication interventions. First, many people stopped eating chicken during the outbreaks, indicating that they are worried about infection. In fact, getting AI by eating chicken was the most commonly mentioned possible route of bird-human infection. The two situations when food is most likely to be under-cooked are when it is prepared by children and when it is prepared during ceremonies – not for a specific reason, but usually because people are impatient. Communications efforts focused on children and traditional practitioners are likely to be effective. It may also be possible to enlarge people’s concern about getting AI from eating chicken to concern about getting it from slaughtering and preparing chicken – a possibility that none or few people mentioned in the PAR sites.

In addition to providing insights that will enhance communication efforts regarding individual key behaviors, as discussed above, one finding of the PAR may be particularly important because it leads us to consider a sector that deeply motivates people but that no one has considered until now: religion. One of the most important uses of chickens in both Burkina Faso and the Lagos PAR sites was in religious ceremonies. This was the only use for which people could not imagine substitutes, as they could for chicken used as food, as a homegrown product that could be sold, or as a gift to reinforce social ties. Where sacrificing chickens is an important part of

rituals, reminding people that they risk losing them to AI may be a very powerful motivation for engaging in preventive behaviors.

Many people mentioned religion when speaking about AI as a new and devastating disease or considering the prospect of a human pandemic. Some spoke of AI as indicating a deity's anger and some Christians relate it specifically to the idea of the end of days. When communities were asked how they might respond to a pandemic, prayer was mentioned many times. Religious leaders are important communicators and should be consulted and involved in interventions to prevent and contain AI.

COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

Table 6: PAR results related to enabling factors for behavioral interventions identified by UNICEF/FAO/WHO

Behavior set	Enabling factors	Relevant PAR findings from	
		Nigeria	Burkina Faso
Report	Public trust in authorities high	Real mistrust – some even implicate higher levels of the government in the outbreak or heightening awareness of it in order to manipulate the poultry sector.	Communities trust village, territorial chiefs and were noncompliant when administrators tried to bypass this local system
	Public are aware of risks and recognize symptoms	Mainly aware of high and rapid mortality, which is most easily seen in large flocks; confusion about symptoms noted in Kano; not all believe it is a new disease	Recognized high and rapid mortality, and awareness of risks of human transmission as reported by the media
	Rapid and appropriate response guaranteed	Confused response (public denial...	Samples taken quickly, but 2-month delay in responding, so that culling took place long after mortality from AI had ceased
	Surveillance systems in place and monitored effectively	No surveillance	No surveillance
	Compensation ensured and system in place	Many did not receive compensation; commercial farmers were more likely to receive it than backyard farmers; thought to be too small; mistrust of system	Compensation timely, but different amounts in two sites. There were complaints about inadequate rates of compensation
	Diagnosis and treatment for human cases available and accessible	Unknown	Unknown
	Community feedback mechanisms	Through LGA (local government authority) which works well in some areas, not well in others	Through traditional authorities and local veterinarians
Separate	Public trust in efficacy of separation	Related to beliefs about transmission - those who believe that transmission comes from wild birds, day-old chicks, and/or birds from outside would be more likely to separate. Those who believe in dust, air, season, hygiene would be less likely. Separation would mostly be accepted in times of widespread AI.	
	Accessibility and affordability of materials	More affordable for those whose main income is from semi-commercial or commercial flocks or from trade	Costs well above income level of small producers

COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

Behavior set	Enabling factors	Relevant PAR findings from	
		Nigeria	Burkina Faso
	Feasibility of separation, e.g., seasonally, space, feeding	Not feasible for free-range chickens	Not feasible
	Novel solutions from community-based problem solving	None emerged	None emerged
	Regulation and enforcement of local authorities	None	None
(Burn bury dead birds)	Food security assured (so no need to eat sick birds)	Many reported that during the outbreak they did bury dead birds; However, there were also reports of quickly killing and eating (or selling off) birds that appeared to be sick or that came from flocks where there was sickness. Some poor people ate dead birds.	In early stages of the outbreak dead birds were eaten by some parts of the population but as the awareness of the risks of human transmission grew dead birds were buried.
	Disposal facilities and fuel	Buried (not clear what happens if there are a lot of dead birds)	Dead birds buried
Wash	Availability and accessibility of clean running water and soap in households, schools, work and public places	Availability of water not a limiting factor; soap may be (not clear if unavailable or not used because of habit).	Availability of water not a limiting factor; soap may be (not clear if unavailable or not used because of habit); motivation is smell on hands, feel, not contamination
	Availability and accessibility of cleaning materials such as disinfectant	Used by semi-commercial and commercial farmers, not by backyard farmers	Disinfectant used after culling was provided by authorities
	Regulation and enforcement of local authorities in public places such as markets and commercial sector	No	No
(Clean clothes etc.)	Local authorities regulate and enforce safe market practices	No regulation, no enforcement	No regulation, no enforcement
Cook	Understanding of cultural practices related to food handling, preparation and consumption	Food most likely to be under-cooked by children; no attention to safe food preparation	Food most likely to be under-cooked by children; in addition, chicken used in sacrifices may be undercooked
	Availability of prepackaged poultry and poultry products	Not mentioned	Not an option
	Regulation and enforcement of local authorities such as markets, butchers and commercial food vendors	Not questioned	Not questioned

IMPLICATIONS FOR SELECTION OF CHANNELS: SUPPORT FOR USING A MIX OF MASS MEDIA AND INTERPERSONAL CHANNELS

An important component of a sound communication strategy is selection of the channels to use. The PAR provided a rapid means of identifying the most trusted and reliable sources of information in the community. PAR results demonstrated the relative usefulness of different channels of communication during the outbreak and strongly support a strategy of using a mix of mass media and interpersonal communication channels.

Mass media can quickly reach large numbers of people with straightforward information. For example, once people know what avian influenza is and how it is spread and accept the notion that an effective way to contain it is to stop movements of poultry, mass media is a good way to let them know where movement controls are in force. Mass media can also remind people about more complex behaviors, for example, to wash hands frequently. To be effective, mass media messages need to be based on issues and levels of understanding that have been determined by dialogue with communities. For example, regarding hand washing, results of the PAR suggest that reminders that mention hands smelling good will be more effective than those that talk about clean hands.

The main challenge of mass media is that it is not a good format for making complex arguments – in the first example above, for getting people to understand and be willing to comply with movement controls. A related challenge, reflected in PAR findings from both Burkina Faso and Nigeria, is that people have a sophisticated understanding of how mass media can be used to manipulate; they no longer automatically trust what they hear or see on radio or television. One exception to this can be TV and radio personalities, who have built up trust with audiences – the audience's connection with them emulates the kinds of relationships that make interpersonal communication so effective.

Interpersonal communication is intrinsically more persuasive because it is grounded in trust and acceptance and because it allows dialogue, so that people have the opportunity to fit the desired behavior into their own context. However, interpersonal communication can be hard to achieve at scale or over long periods of time. If those entrusted with communicating interpersonally are tasked with focusing on complex issues, some kind of training may be required. Also, if the need for dialogue is great, as it is with avian influenza, volunteers may become fatigued.

In both Nigeria and Burkina Faso mass media was a critically important channel during the outbreak. Radio, and to a certain extent, television were the preferred channels used in the early stages of the outbreak to convey information to the public about controlling the spread of the disease, including announcing the public health measures required. However, in both the urban and rural sites of Nigeria and Burkina Faso, these efforts were met with limited success as doubts and skepticism mounted among the poultry raisers and population at large, fueled in part by speculation and news of the outbreak circulated using the same channels.

Acceptance and compliance with the suggested measures were achieved when interpersonal channels of communication (Professional Poultry Farmers Association roving theater in Nigeria and traditional villages' leaders and traditional healers in Burkina) were called upon to pass on and disseminate information. Lessons learned include optimal interpersonal channels:

- To reach and mobilize semi-commercial and commercial poultry farmers, the most reliable and trusted channels are Veterinarian Doctors and experienced farmers.
- To reach most backyards producers and the general population, dialogue and discussion should be led by village leaders and traditional healers.
- To involve communities in discussion and preparation for crisis events such as widespread AI or human pandemic important channels are religious leaders of all types and local authorities

These interpersonal channels should be used in conjunction with each other and with local radio and television, which can echo and amplify key messages and link community mobilization with government information efforts.

RECOMMENDATIONS FOR COMMUNICATION: OVERALL STRATEGY

The results of the PAR confirm two fundamental approaches that AED has repeatedly found to be important in our work in West Africa and elsewhere:

First, communications programs must be grounded in the local social, economic and cultural context. The optimal way to achieve this is to start with participatory research which can provide information about the feasibility of changing behaviors within that context and about the key factors that might motivate or inhibit people in making those changes. Messages developed on the basis of this kind of information are more likely to be persuasive and promote actions that are “do-able” at the community level – and therefore likely to be adopted – than messages based simply on “the right thing to do”. As discussed above, many of the global messages that have been developed for preventing and responding to avian flu are not practicable for backyard producers in West and Central Africa.

Second, programs must use a mix of mass media and interpersonal channels. Each has their strengths; if programs draw on those strengths they will be more effective in promoting changes in behaviors that are feasible and likely to reduce transmission among birds and from birds to humans. For example, mass media quickly reaches large numbers of people with straightforward information; supplementing it with large-scale interpersonal communication gives people an opportunity to discuss proposed actions, and can build their resolve for changing behaviors and for adapting livelihood systems.

In addition, the PAR results suggest some specific communications approaches to address specific preventive behaviors.

Many people are already practicing some preventive behaviors – washing hands (with water) after handling feces, cooking meat and eggs thoroughly, burying dead birds when there is an outbreak of AI. These behaviors can be reinforced and improved with relatively simple messages disseminated through mass and/or community-based media, such as theatre for development and rural radio.

In addition a mix of large-scale and interpersonal channels should be effective in getting people to apply temporary quarantine for birds introduced to the flock. Mass media and/or community based media can be used to present information about how AI is spread from infected to healthy birds and to tell people that one way of keeping their flocks healthy is by keeping new birds separate for two weeks. Then those who are trusted sources of information about animal and human health can discuss how this could be done (for example, the type of cage to use for temporary quarantine).

The PAR results revealed many different kinds of barriers to individuals and communities changing other important preventive behaviors. For these behaviors the best way to stimulate change is to facilitate dialogue with and within communities, encouraging communities and individuals in them to develop their own solutions.

One way to support this might be to develop “community discussion guides” to help extension workers and community leaders start community dialogues. These should include basic information about how infection is transmitted among birds and from birds to humans, and then questions to stimulate discussion about the following topics:

- Ways the community and individuals in it can act to keep birds safe:
 - Washing hands, feet and equipment that have come in contact with feces before bringing them into their own household area (and possibly before bringing them into the village or neighborhood).
 - Burying/burning dead chickens where they cannot be retrieved by animals
 - Agreeing to report unusual numbers of sick or dead birds to the authorities, stop movement of poultry in or out of the neighborhood, and cull birds as recommended

- Ways the community and individuals can act to keep members of the community safe:
 - Safe slaughter practices
 - Safe cleaning of chicken houses
 - Bringing someone who is sick and who was around sick or dead birds to see a health provider within two days of getting sick.

As with any intervention, this approach should be fine-tuned by early trial implementation in a small group of communities.

Another group it is important to open dialogue with is traditional practitioners, about the risks of exposure to AI infection associated with sacrificing chickens and acceptable and feasible ways of reducing these risks.

Advocacy needs to be an important part of any communication strategy. The PAR results indicate that communication interventions addressing groups at risk may not be appropriate for some preventive behaviors because the enabling environment is absent. Advocacy should address the need for improved policies concerning:

- Compensation. Policy makers need to develop a fair compensation policy that takes into account ownership of birds by women and children as well as heads of households and ownership by backyard as well as commercial farmers. There should be a clear rationale for compensation rates and a clear process for obtaining compensation.
- Improved surveillance and response. Surveillance systems should provide a rapid response to reports, clear guidelines about steps to be taken, and quick and fair compensation for birds that are culled. Ensure that the system taps into motivations for reporting that resonate with communities.
- Better biosecurity for semi-commercial and commercial producers. Producers who are willing to change their livelihood system in order to make it safer from avian flu need support to make these changes, for example, subsidies for improved bio-security systems. In addition, biosecurity regulations need to be enforced.
- Greater transparency. Transparency about outbreak information and government actions is key to counter mistrust and rumors, two of the biggest threats to appropriate outbreak response. If people don't trust authorities and communities are rife with false information about AI policies and conditions, skeptical audiences may not follow recommended courses of actions.

Once any of these policies is developed, information about it needs to be communicated to priority groups; as with other components, a mix of large-scale media and interpersonal communication will be most effective.

LOOKING TOWARD THE FUTURE: IMPLEMENTING PAR AT SCALE



Community mapping by youth, Burkina Faso

This study confirmed the usefulness of the PAR approach. It is a method of rapidly obtaining a “thick” understanding about AI in rural and urban communities, that is, a richer, wider understanding of issues than is usually obtained using conventional formative research approaches. Recommendations resulting from the PAR are contextualized; it is thus an excellent means of identifying messages and message framing that “works”.

PAR is also a way of stimulating communities to assess what they might do to prevent infection of their birds and themselves and can also provide them with additional ways to do so. For example, teams in Lagos State included the local surveillance officer; involving professionals like this as local facilitators on the PAR team stimulates community-professional dialogue. Activated communities start to grapple with issues and organize responses that “top-down” interventions might not stimulate.

Because it can meet these dual objectives, PAR is particularly appropriate for informing communication efforts that seek to marry the wide reach of sender-receiver “messaging” with more intensive, interpersonally-based “dialogue” approaches, that is, communication interventions using a mixture of mass media and interpersonal approaches. As discussed above, these are particularly likely to succeed.

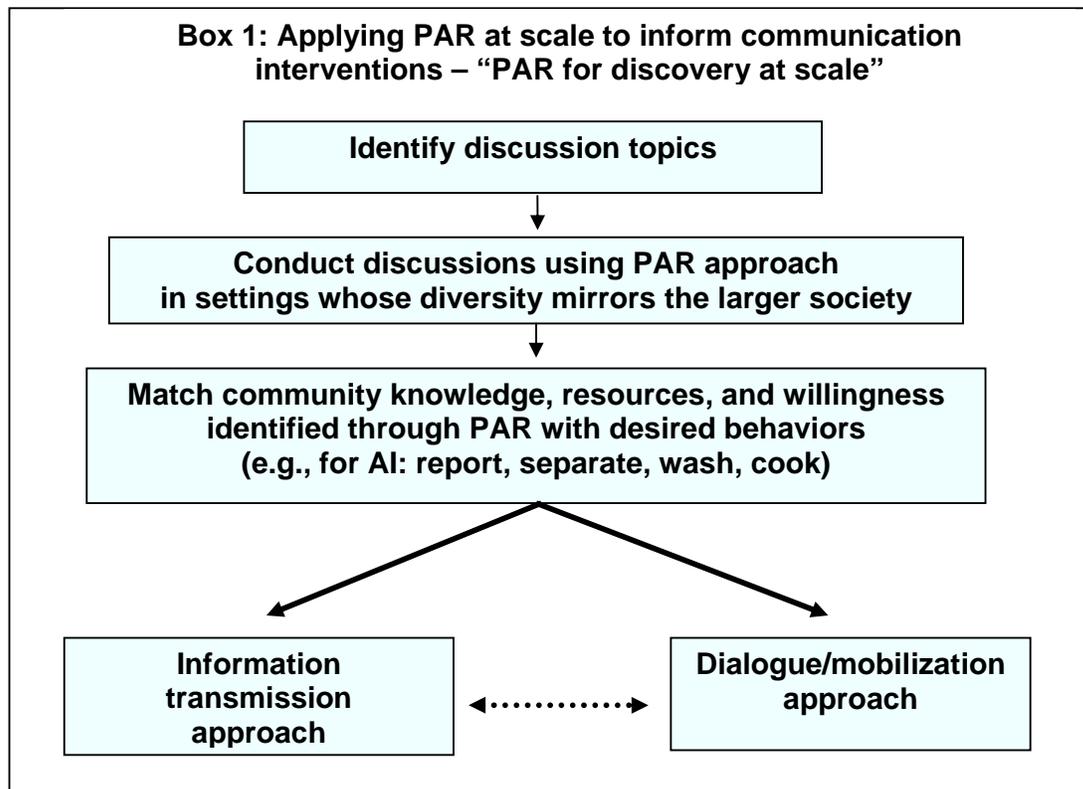
For both types of outcomes that PAR produces (community activation and insights about community knowledge, motivators and barriers), results from carrying out PAR focused on a specific issue can spill over – networks, motivating factors and trusted sources of information identified during the activities focused around poultry and avian influenza are likely to be relevant for other health and development issues. Similarly, communities that start grappling with contingency planning to meet the challenges of avian influenza will probably mobilize more easily for, say, providing transport for women in labor.

The rich understandings of issues obtained using PAR make it a particularly attractive method to use to obtain insights in situations of great cultural diversity. This set of PAR activities, carried out in sites near and far from urban areas in three locations that were very different, revealed many similarities and some important differences that are linked to culture and local context. Capturing this diversity is critical to inform communication about AI. One of the contributions that PAR could make to strategic communication is that it offers an opportunity to conduct quick assessments in a variety of communities. If such communities represent the diversity in the larger population, then PAR findings can be used to inform communications planning at scale (“PAR for discovery at scale”).

For all these reasons we recommend that UNICEF and others consider implementing PAR on a wider scale.

APPROACH

A possible approach is depicted in Box 1.



Basically, the first step in the proposed approach is to identify discussion topics (in this case, it was poultry rearing and the threat of avian influenza and its possible effect on security; it could just as easily have been availability of water, hand washing habits and trachoma or diarrhea). The second step is to implement PAR in a variety of settings that reflect the diversity of the eventual audience (say a national population). Third, matching results of the PAR – findings about community knowledge, resources and willingness/ability to change – with the desired (possibly expert-defined) behaviors will reveal the feasibility of the behaviors and may also suggest effective alternatives that are more feasible or acceptable to the community. Finally, the results can be applied in two ways:

- 1) PAR results can be used to develop communication interventions to *inform* the wider group (and the diverse subgroups with content appropriate to each) about the relevant issue (through mass communication), by identifying important audience segments, key messages, frames and channels.
- 2) In addition, the same results can be applied to *engage* and *mobilize* those communities in finding and implementing solutions. In addition, one intriguing, although untested, possibility is that those seeking to engage communities might do so more effectively if they used substantially abbreviated PAR process, involving a subset of PAR techniques (for

example, the seasonal calendar, transect walk, bean quantification, causal flow diagram and force-field analysis). If this were a possibility, the choice of techniques would be informed by observations about the particular methods or sets of methods used during the PAR that were particularly important in provoking community discussion or provided the greatest insight for community members. An additional question is whether the same subset of techniques would be appropriate for different issues.

CHALLENGES

The two main obstacles to implementation at scale are cost, in terms of both time and money, and technical capacity.

COST

This first application of the PAR approach took several months of time from inception to the end of field work, in addition to reporting, and involved a large international team as well as two teams from local institutions, thus necessitating extra time for contracting procedures. For PAR to be more widely used it has to produce results much more rapidly and at lower cost. Several approaches can help reduce both these costs:

First, involving local teams that are expert in PAR will eliminate the cost of involving expatriates. Second, if a network of such experts can be centrally managed – say through a center or institution - it will shorten the time required for the research by reducing the contractual burden of involving different institutions. (If this is not possible, for example, if many of the experts have strong institutional affiliations, an alternative would be for the managing institution/center to have standing contractual relationships with those institutions.)

Second, further PAR on AI can be streamlined by increasing the focus, for example, by obtaining information about semi-commercial and commercial farms only insofar as they interact with backyard farms or vice versa. This increased focus will reduce the complexity and therefore the amount of time needed for analysis. A third, theoretically possible way to streamline the PAR might be to apply fewer methods, though in fact the research team is cautious about the implications of losing opportunities for triangulation.

Another approach to resolving the challenge of costs is to increase available funding. This could be accomplished by advocacy to key stakeholders. As noted above, many of the PAR findings – regarding resources such as networks, motivators and trusted sources of information – have an application beyond the issue that prompted the PAR.

ADDRESSING THE ISSUE OF TECHNICAL CAPACITY

PAR requires teams of people who not only have technical expertise, but who also can speak the local language well enough to understand nuances of meaning and who are familiar with the culture. The only way to have such teams is to build on existing local networks of PAR practitioners (see Annex 4 for an example of some possible groups in Francophone West Africa). Ideally the managing institution would be a center of excellence, capable of implementing PAR and coaching others in doing so. This process of providing sufficient orientation for experienced social scientists to carry out PAR can be jumpstarted with a tool kit. This kit would include information about the different techniques, guidance in applying them, and discussion of factors that would affect the order in which they are applied. It would provide guidance and exercises to build skills such as probing, facilitating without dominating, and analyzing data – triangulating rather than cumulating results thus resolving some of the methodological issues that were observed during the PAR in Burkina Faso and Nigeria (summarized in Annex 5). Finally, it would include data templates to facilitate triangulation as well as documentation of the PAR process.

NEXT STEPS

There are four processes that will need to be accomplished in order to begin building capacity for implementing PAR at scale. They can be carried out simultaneously.

1. Develop a network of local PAR practitioners.

The first step in developing a network of local PAR practitioners is to identify existing practitioner networks, both Anglophone and Francophone. From this group, the next step is to distinguish key partners who can both implement a streamlined PAR and coach others in doing so. An additional consideration should be whether the identified group(s) has the capacity to manage a network.

The first task of the group that is identified will be to work with those developing the toolkit to use the toolkit themselves in implementing PAR. Their second task will be to identify others, whom they will orient using the kit and then coach through an implementation. Based on these experiences, the group can then finalize the kit, with some input from the developers.

The core group can be entrusted with the responsibility of growing the network, continuing to recruit, orient and coach additional PAR implementers from diverse settings in order to be able to provide a wide range of experts who can be mobilized at short notice.

Finally, they should improve and expand applications of PAR by sharing results and lessons learned, either through channels such as PLA Notes or other means.

2. Advocate to stakeholders.

The objective of this advocacy would be to persuade stakeholders of the benefits of applying PAR to obtain insights that will be helpful for developing mass media and interpersonal communication interventions for other health/development sectors, such as integrated child survival, management of the environment, and education. Ideally, within a short period of time, avian influenza can be integrated into child survival (see below). If a sufficient demand for PAR (and for experts who can implement it) can be generated, then all will benefit by the expansion of the pool of people who are able to carry it out. In addition, as mentioned above, some key results of any PAR will be useful for all.

3. Develop a toolkit.

As discussed above, development of a toolkit will help experienced social scientists successfully implement PAR and will thus improve the availability of experts to do PAR, a necessity if UNICEF is seriously interested in implementing at scale.

4. Investigate the possibility of training community agents to use an abbreviated PAR process to initiate dialogue with communities.

As discussed above, in the *Approach* section, it is important to ascertain whether training mobilization agents to use a subset of PAR techniques to initiate dialogue with communities would make them more effective. If so, a second question is whether the same subset of techniques would help when initiating discussions about different types of issues – for example those that can only be affected by collective action, such as decisions to forgo cutting certain trees, compared with those in which social groups facilitate or inhibit choices that are primarily individual or familial, such as staying in school. If using these techniques is helpful, then a reference guide (i.e., a job aid for mobilization agents) and training materials should be developed.

Accomplishing these four processes will result in an improved capacity to apply PAR, increased knowledge to inform communication, and more communities that can respond to AI, human pandemic flu and other health and development problems effectively and in ways that do not exacerbate inequalities.

INTEGRATING AVIAN FLU COMMUNICATION INTO BROADER CHILD SURVIVAL STRATEGIES

Because of its potential impact, avian influenza is currently a privileged topic that receives funding separate from that for mainstream child health issues. This windfall situation is unlikely to last. More importantly, it is important that special issues such as avian flu not distract donors, health leaders and communities from addressing long-standing serious health issues. Avian flu can be successfully integrated into a broader approach.

The four child health issues with which avian flu overlaps are hygiene, diarrheal disease, nutrition and respiratory disease. Avian influenza can be added to the long list of infectious diseases that hand washing can help prevent. Taking avian flu into consideration might encourage those implementing PAR on hand washing to broaden their definitions of possibly contaminating events. In addition, they can build on one of the insights obtained by the AI PAR – that hands' smelling bad is an important reason to wash them. The AI PARs in Burkina Faso and Nigeria revealed that food insecurity is a major factor predisposing people to take the risk of eating potentially infected meat and eggs; reducing food insecurity will reduce this risk. Finally, ensuring that people are attentive to respiratory symptoms and that they seek care rapidly, especially if they have been exposed to sick or dead birds, will improve chances of survival if they have been infected with H5N1.

Recognizing this overlap and the advantages of integrating avian flu into a broad approach will bring it to the center of UNICEF's work in West and Central Africa - improving child survival in the area of the world where infant and maternal survival is the worst.

ANNEX 1: RESEARCH TEAM MEMBERS

AED

Dr Serigne Mbaye Diène, Project Director & Advisor, Burkina Faso
Dr Eleonore Fosso Seumo, Senior Program Officer & Advisor, Nigeria
Dr Silvio Waisbord, Technical Advisor, Communications
Dr Karabi Acharya, Technical Advisor, PAR
Dr Susan Zimicki, Technical Advisor, AI
Dr Berengere de Negri, Technical Advisor, PAR
Ms Sandra Kong, Administrator and Technical Support
Ms Takady Konate, Finance Manager

BURKINA FASO

Dr Daniel Thieba Team Leader
Dr Christophe Coulibaly, Field Coordinator
M. Pierre Aimé Ouédraogo, Facilitator
M. Luc Lankoande, Facilitator
Mme Fatoumata Koné, Facilitator
M. YANOOGO Enoch; Community Facilitator, Gampela
M. TONDE Abel, Community Facilitator, Gampela
M. BAKI Benoit Community Facilitator, Ténado
M. BAMOUNI Philippe Community facilitator, Ténado

NIGERIA

Dr Umar Auwal Muhammed, Team Leader

KANO STATE

Mr Ilu Ismael, Team Coordinator
Mrs Hajara Suleymane, Facilitator
Mr Aminu Suleymane, Facilitator
Mr Amino Abba, Facilitator
Mr Nazifi Ahmed, Community Facilitator, Jogana
Mr Farihat Ahmed, Community Facilitator, Jogana
Mrs Shamsuddeen A. Mohammed, Community Facilitator, Jogana
Mr Ado B. Dahiru, Community Facilitator, Tarauni
Mr Abdurrazaq Haruna, Community Facilitator, Tarauni
Mrs Azumi Rufai, Community Facilitator, Tarauni

LAGOS STATE

Mrs Ayodele Adeyoola Iroko, Team Coordinator
Mr Didos Olaoluwa, Facilitator
Mr Leke Adeyemo, Facilitator

COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

Mr Bola Aladesuyi, Facilitator

Mrs. Sename Ogunjobi, Community Facilitator, Ajara Topa

Mr. Kehinde Igesu, LGA Surveillance Officer; Community Facilitator, Ajara Topa

Mrs. Sename Todonukun, Community Facilitator, Ajara Topa

Chief (Mrs) Phillips, Community Facilitator, Iba

Mrs. Oseni, Community Facilitator, Iba

Mr. Tunde Ahotan, LGA Surveillance Officer; Community Facilitator, Iba

ANNEX 2: RESEARCH THEMES

1. *Poultry coming into the household*

- Livelihoods
 - Who raises poultry (e.g., professional farmers, families, market sellers, local producers) and why
 - How livelihoods vary by the type of poultry (e.g., chickens, ducks, guinea fowl)
 - Amount and uses of income generated from poultry
 - Importance of poultry in life (e.g., financial, other reasons)
 - Poultry farming procedures
 - Community safety nets for people who lose their poultry to disease, theft, accident
- Ritual or religious exchanges

2. *Care for poultry in the household*

- Hygiene
 - Hand washing practices (e.g., with soap, ash) before and after handling chickens, before food preparation and consumption
 - How people handle chicken droppings
 - Perceptions (“dirty” or “natural”) and uses of chicken droppings (e.g., fertilizer)
- Gender relations and gender/age division of labor
 - Gender conventions and practices regarding poultry husbandry (e.g., who by convention should and who does care for feed, collect eggs, catch, slaughter, pluck, prepare food, clean different types of poultry)
 - How division of labor vary with the type of poultry
- Poultry health
 - What people do to keep birds healthy and prevent illness
 - Previous experiences of massive deaths of poultry in the past
 - How people handle and who takes care of sick poultry
 - Home remedies
 - Community reactions and suggestions to some specific AI prevention interventions (e.g., keeping new birds separate from existing ones)

3. *Use of the poultry*

- Food security and nutrition
 - Who eats poultry and eggs, how often and in circumstances in which poultry and eggs are consumed
 - Knowledge of nutritional value of poultry and eggs
 - Conditions/situations prohibiting poultry and eggs (e.g., pregnancy in some cultures)
 - Preparation, handling, and cooking of poultry and eggs
- Religious, social, and cultural traditions related to poultry (e.g., brides bringing chickens to a groom’s house)
- Other uses of poultry (rituals, gifts, games, pets)

4. *Seasonal variations and AI in complex settings*
 - Seasonal variations in buying, selling, and eating poultry
 - Seasonal variations in caring for poultry (e.g., are they kept enclosed/under cover at some times of the year)
 - Seasonal variations of food scarcity, illness, limited access to health facilities, limited cash, limited time available

5. *Human health, especially the health of children*
 - Awareness of possibility of transmission from animals to humans
 - Concept of contagiousness; do people do anything to avoid getting respiratory disease from those who have them
 - Experience with epidemics (e.g., measles, chickenpox, cholera), especially family and community coping mechanisms

6. *Communication assessment*
 - Sources of information about poultry and human health
 - Where people communicate
 - What people value (motivators)
 - Who are the trusted/authoritative voices specifically on AI-related issues (e.g., what social networks can be used for communication)

ANNEX 3: DESCRIPTION OF RESEARCH METHODS USED

Participatory action research is a community-driven process for assessing situations and then determining possible interventions or solutions to the issues identified and prioritized. This section highlights the PAR data collection tools that were used to gain information and insight about selected research themes in each AI situation (sporadic AI outbreaks, widespread AI and pandemic influenza).

1. Community or social mapping provides a visual representation of the community. This was one of the first exercises the teams used, as it is relatively easy and fun to do, and it also is a good way to establish rapport with community.
 - What we learned from using community mapping: presence and location of resources and assets that are important to different community groups. The map illustrates geographical features, infrastructure, types of facilities, livestock, identifies who owns poultry, how people keep them, where they are kept and where they can be found (e.g., in/outside houses), who buys them, and where people buy them.
2. Transect walks is an observation technique; a research team takes a walk around community with different groups of community members (men, women, youths). They may also talk to people met along the way. Teams did this after community mapping.
 - What we learned from transect walks: observations of people, resources, surroundings, opportunities, conditions in communities. For example, teams noted gender and generational divisions of labor regarding poultry, as well as how people interact casually with poultry and poultry feces.
3. Participant observation is also an observation technique that allows the researcher to be immersed in the community and become part of the situation to be observed.
 - What we learned from participant observation: a deeper understanding of poultry care, movements and hygiene
3. Causal flow diagrams are graphical representations of processes or chains of events. They help communities identify issues, explore feasibility of proposed solutions, and analyze the impact of different problems and solutions.
 - What we learned from flow diagrams: where people get poultry, flow of chickens from obtaining/hatching to consuming or other outcomes (e.g., mortality or selling).
4. Seasonal calendar/diagrams help to identify periods of greatest difficulty and vulnerability, or other significant variances that impact on people's lives, or explore temporal relationships between recurring events in community (e.g., weather and disease outbreaks, migration and disease outbreaks).

COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

- What we learned from seasonal calendars/diagrams: understand the seasonal variations in movement of poultry, illnesses for poultry and people, time, cash, and access to health care facilities, availability of food, increased mortality of poultry
5. Venn diagrams are used to visualize in a graphical form the resources that can be tapped by the community to identify and resolve problems
 - What we learned from Venn diagrams: the individuals and institutions providing care and advice about poultry raising; the frequency of interaction between specific individuals and institutions and the community; and the type of care given to poultry in the household
 6. Bean quantification is a technique for estimating the relative importance of the uses of poultry in the household
 - What we learned from bean quantification: what proportion of income from poultry is used for different purposes, the relative importance of different uses of poultry
 7. Story telling is a method to document a particular story that illustrates a sensitive research theme
 - What we learned from storytelling: examples of life stories about situations that resemble the hypothetical situations of widespread AI and Human Pandemic
 8. Force-field analysis is a method to identify available resources and constraints to implement actions identified by the community
 - What we learned from force-field analysis: the human, financial and material resources available to the community to control AI and the constraints they could face as well as ways these constraints might be overcome

A second set of PAR data collection tools was used to explore community members' perceptions about the three hypothetical situations of AI.

9. Focus group discussions (FGDs) are guided group discussions exploring specific topic areas with specific types of community members. They help the research team understand community perceptions.
 - What we learned from FGDs: perceptions of importance of poultry, concepts of illness, other uses of poultry, feasibility of AI interventions
10. In-depth interviews are one-on-one interviews to gain a better understanding of individual's practices and beliefs about specific topic areas.
 - What we learned from in-depth interviews: practices of handling poultry; religious, cultural, traditional practices related to poultry; as well as knowledge and beliefs related to illnesses including AI

11. Matrix ranking/rating is a method to identify and rank issues.

- What we learned from matrix ranking/rating: communities identified and prioritized key issues/concerns regarding three different scenarios of AI and possible interventions addressing AI. This method helped us understand the importance of factors such as cost, feasibility, acceptability, probable sustainability, who benefits, time to benefit, community acceptance.

ANNEX 4: POSSIBLE PAR RESOURCES

INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT - SENEGAL

IIED Sahel
Point E, Rue 6 X A
B.P. 5579 Dakar
Senegal
Tel: +221 824 44 17
Fax: + 221 824 44 13
email: iiedsen@sentoo.sn
web: www.iiedsahel.org

IIED PARTNERS:

MARP NETWORK, MALI - BURKINA FASO - NIGER - SENEGAL

The MARP Program of IIED Sahel focuses on participatory activities of local institutions working to improve the well-being of villagers, to participatory research and to planning.

The activities of this program are centered around research-action, diffusion of information, and training.

The coordinators of the MARP network :

Burkina Faso : Mathieu Ouedraogo : ommb@fasonet.bf
Mali : Idrissa Maiga : grad.mali@malinet.ml
Niger : Seyni Hama : hamarp@intnet.ne
Senegal : Malamine Savané : marp.sn@hotmail.com

ARED (ASSOCIATES IN RESEARCH AND EDUCATION FOR DEVELOPMENT)

ARED is a non-profit organization created in 1990. Since 1994, ARED has worked in collaboration with IIED Sahel in the north of Senegal, using participatory methods to encourage the population to take the initiative and manage its own participatory development. ARED's objective is to support and promote the connections between education, fundamental research and community action. E-mail : ared@enda.sn - ared-ed@enda.sn

CEK KALASABA, MALI

The Keita Advisory Group is a consultant group based in Bamako, Mali that offers services in the domains of agriculture, management and health. The group coordinates the program "Successful Decentralization" set up by IIED Sahel.
Contact : cek@spider.toolnet.org

COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

GRAD (RESEARCH ACTION GROUP FOR DEVELOPMENT), MALI

GRAD is a NGO that supplies technical and institutional assistance to local communities to improve the effectiveness of their activities. GRAD was founded in Mali in 1985. Its principal areas of activity are: documentation, civics, credit, cereal and grain banks, and development of water systems in villages, as well as research-action to improve management of natural resources, decentralization and conflict management. GRAD also works with the training of PAR methods of the Sahel program. Contact : grad.mali@malinet.ml

GRAF (RESEARCH GROUP AND LAND TAX ACTION), BURKINA FASO

GRAF is a framework for involving people of different types and competencies in reflection, discussion and dialogue around questions pertaining to land in Burkina Faso. This group's main aim is to support excellence in land research and to nourish a real national debate on policy and land legislation, implicating all of the concerned actors: researchers; development promoters; producers It also serves the national offices of various networks and international organizations working in this area. GRAF is a local representative of "LandNet West Africa," a West African network on land.

IER (INSTITUTE OF RURAL ECONOMY), MALI

The Institute of Rural Economy (IER) is a public sector organization with overall responsibility for agricultural research in Mali. It is a non-profit, semi-independent organization under the authority of the Ministry of Rural Development. In 1992, five research stations were created that emphasize participatory development, research-action, and management of natural resources. The institute's research also covers the fertility of soils, their characterization and their classification. Contact : daouda.kone@ier.ml

JAM SAHEL, MALI

Jam Sahel is a young Malian NGO that was started in 1997 and is based in Niore de Sahel in the region of Kayes. Its scope includes management of conflict between herders and farmers over access to land and other natural resources in the region of Kayes. Jam Sahel also involved in civics, good governance and conflict management with the aim of improving the capacity of civil society. The NGO also provides support for government decentralization policies.

NEF (NEIR EAST FOUNDATION), MALI

NEF is a NGO based in Douentza in the region of Mopti. In 1984 it became active in field work, supervising activities affecting management of natural resources and civic education with support of Dande Douentza rural radio. Contact : [nefdtza@eikmail.com](mailto:nefdza@eikmail.com)

ANNEX 5: METHODOLOGIC ISSUES

AI is different from other issues that have been the focus of PAR approaches in that many of the local researchers had no or limited experience with and only limited knowledge about AI. Thus one important consideration was the amount of orientation to give team members.

To date, most knowledge about avian influenza and most of the efforts to prevent and control the disease have centered on commercial poultry production. Only in the past few years has much attention been paid to backyard farmers, and the tendency has been to attempt to apply what works for commercial establishments to backyard farmers. However, it is becoming clear that many of the recommended actions are not feasible and perhaps not even necessary in the backyard situation (for example, there is an active technical discussion about the optimal extent of culling to prevent spread of the disease once an outbreak has been detected).

One of the reasons for carrying out the PAR was to understand AI and its possible consequences from the community's point of view. We were concerned that orienting team members to the biomedical/commercial perspective might get in the way of that understanding. Thus the orientation was brief, and we endeavored to be clear about what is known and what is surmised about the many unresolved issues, for example, the controversy about migrating birds vs. trade as the key factor in cross-national spread.

The benefit of this approach is that by focusing widely we learned of the central role of chickens in ritual and social life of communities; an aspect that has not been perceived by those whose research has focused more narrowly on biosecurity practices. The downside of this approach is the large amount of information collected, which presented challenges for analysis. We also noticed a tendency for teams to cumulate information rather than triangulate what was learned from applying different techniques, and for synthesis at successively higher levels to lose telling detail. In addition, we feel that it would be helpful to provide more strategic guidance for the analysis process, in the form of questions and templates that facilitate triangulation and additional analysis time.

Although the "problem-solving" phase of the PAR was framed in terms of what the community could do with its own resources, in both urban and rural sites in all locations, but especially in Nigeria, community members were clear that they needed outside assistance to meet the challenge of AI. When we queried the Nigerian community's strong reliance on government funding and support, the response was "the local government is the community". However, the disappointment voiced about compensation suggests that communities may need stronger facilitation during the problem solving phase to be encouraged to consider non-government resources. Some of the facilitators also needed extensive coaching to probe successfully during the exploratory phase of the PAR. Team training should include exercises for building and supporting these specific facilitator skills.