A Collaborative Research Project Funded by:

DFID Department for International Development

Implemented by:

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
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Controlling Avian Flu and Protecting People's Livelihoods in Africa/Indonesia Region

HPAI Research Brief | No. 5 – Year: 2008

The Role of Information Networks in Communicating and Responding to HPAI outbreaks

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Key Findings

- A lack of incentives for traders to report suspicious bird deaths leads traders to sell off sick birds and contribute to the spreading of the disease.
- The reluctance of farmers to disclose their sources of birds makes it difficult to track down where the infection originated / entered the country.
- In some countries, wet markets (where birds brought and sold) are not integrated into the communication of disease risk.
- There is a broad consensus on the development of effective communication strategies linking decision makers to all stakeholders in the poultry sector.

In many developing countries, information regarding the occurrence of a disease outbreak must travel through a network of individuals and institutions before it reaches the central government. Likewise, the response must travel back through these networks. Any break in these networks could delay the flow of information and action in either direction, potentially delaying the response and raising the risk of a wider outbreak.

It is therefore important to identify the flow of information for disease reporting among institutions, and also to identify how influential these institutions are in terms of their impact on information flow and response to disease occurrence. Thus, researchers from IFPRI and ILRI conducted network mapping exercises with participating stakeholders from governmental agencies, the private sector, research institutions, and farmer and trader organizations during the HPAI inception workshops held separately in Ethiopia, Ghana, Kenya, and Nigeria to answer the following questions: How does information about a suspected outbreak of avian influenza on the farm or market level reach the respective authorities? How and through which actors is the response to a confirmed outbreak implemented on the ground? In all of these countries, network maps (or Net-Maps) were prepared indicating the actors involved, their different kinds of linkages, and the influence that these actors have on making sure that the information about suspected outbreaks on the farm or market level reaches the national

authorities and that an appropriate and timely response is implemented. The Net-Maps were based on experience with past interventions from the participants as well as their expert opinions. The Net-Maps also helped identify bottlenecks in communication and response that need further attention.

This brief draws out the main findings from the Net-Maps of the study countries, including the potential breakpoints in the disease reporting and response networks.

Actors Involved in Disease Reporting and Response Networks

Ghana

The participants in the network mapping exercise identified the following actors involved in disease reporting and response:

- All sizes of producers of chicken and eggs : peri-urban big farmers, urban small farmers, rural small farmers, service providers, and processors
- Different levels and units of the Ministry of Agriculture (national-level directors, regional level directors, laboratories and veterinary officers, district-level directors, veterinary officers, extension officers)
- Other governmental agencies (the president of Ghana, other ministries and line agencies, the police, the poultry board)
- Governmental agencies in neighboring countries (veterinary officers at the border posts and the directors of agriculture of neighboring countries)
- Local-level groups and individuals (community livestock workers, respected community members such as assembly members, teachers, chiefs, and other opinion leaders)
- Private-sector actors apart from farmers (traders, trade associations, poultry transporters, private sector veterinarians)
- International organizations (FAO, WHO).

The participants agreed that based on past experience (outbreaks of HPAI on three commercial farms), government agencies and their partners showed an impressive ability to do the right thing at the right time. They identified the farmer as the most influential actor in terms of disease reporting, and the Chief Veterinary Officer in terms of coordinating response activities.

Ethiopia

In Ethiopia, the actors were generally similar, but also included:

- Research institutions (Ethiopian Health and Nutrition Research Institute, National Veterinary Institute)
- Coordinating bodies (National Technical Committee on HPAI, National Coordination Committee on HPAI).

While Ethiopia has not experienced a confirmed outbreak of HPAI yet, the participants drew from the experience of two past outbreaks of Gumboro disease that were mistaken for HPAI, thus setting the HPAI response into action. These cases occurred in a government-run multiplication center. The network map is a combination of this experience and an extrapolation to the possibilities of an outbreak on the respective farm levels. Participants generally saw the response as effective and efficient, but they also noted that outbreaks on commercial farms or backyard farms might pose different challenges, for example, in terms

of enforcement. They identified farmers as the most influential actors in disease reporting, and the chief veterinary officer in coordinating response activities.

Kenya

In Kenya, the actors were generally similar, but also included:

- Private-sector input companies (Feed millers, Hatcheries)
- Additional ministries at the federal level (Ministry of Public Health, Kenya Revenue Authority, Ministry of Education, Ministry of Special Programmes, Kenya Wildlife Service)
- Media and politicians
- NGOs and farmers associations.

Currently Kenya has not had an outbreak. Individuals identified the media as the most important actor in communicating risk.

Nigeria

The participants identified the following key actors in the HPAI disease risk surveillance and control system:

- Federal Ministry of Agriculture and Water Resources (FMAWR): responsible for the planning, implementation, and enforcement of agricultural programs and activities.
- Federal Department of Livestock (FDL): subordinated to the FMAWR and led by the Chief Veterinary Officer (CVO), it is responsible for the planning, implementation, and enforcement of animal health programs and activities.
- National Animal Disease Information and Surveillance System (NADIS): subordinated to the FDL and responsible for disease information and surveillance activities. It is the epidemiology unit of the FDL and has a central office and 15 zonal offices (coordinators).
- National Veterinary Research Institute (NVRI) is the national reference laboratory for the diagnosis and investigation of livestock diseases. It is subordinated to the FDL for disease-control purposes and is responsible for testing samples. The NVRI has five regional support laboratories.
- Avian Influenza Control and Human Pandemic Preparedness and Response Project (AICP)– It is a temporary structure funded by the World Bank focusing on promoting partnerships between both the animal and human health agencies to facilitate the control of HPAI and other possible zoonotic diseases in the future. The World Bank Project is under the auspices of NADIS, where its central office is located, and has offices in each state (and in local governments). The AICP state and local government offices are subordinated to the State Department of Veterinary Services.
- State Ministry of Agriculture (SMA) and Department of Veterinary Services: under the disease control act, the SMA is responsible for the planning, implementation, and enforcement of agricultural programs and activities at the state level. The State Director of Veterinary Services is responsible for the planning, implementation, and enforcement of animal health programs and activities.
- Local Government Animal Health Officer: subordinated to the local government veterinary services, it is responsible for implementation and enforcement of animal health programs and activities.
- In addition to the public institutions, there are also private actors in the network.

Among the actors identified, farmers were the most influential actors in terms of flow of information for disease reporting, followed by the local animal health office and the state AICP office. In terms of feedback and dissemination of information (test results), the main actor identified was NADIS, followed by the AICP state office. The key actors for response activities were identified as the AICP state office, which coordinates all response activities, and farmers, who have to cooperate with the implementation of activities.

Bottlenecks in Disease Reporting and Response Networks

Ghana

The participants pointed out the following bottlenecks that might delay the reporting of a suspected outbreak:

- A lack of incentives for traders to report suspicious bird deaths because there is no compensation scheme for traders. As a result, traders are likely to sell off sick birds and contribute to the spreading of the disease.
- The reluctance of farmers to disclose the sources of their birds, which makes it difficult to track down where the infection originated / entered the country.
- The double-edged role of the media, being both the motor of the bird-flu scare (and resulting collapse of poultry market) and the distributor of valuable information. Government representatives agreed on the need to deal more proactively and in partnership with the media.
- In the disease reporting network, the crucial role of animal health technicians in linking rural farms to the rest of the agricultural system was pointed out. But coverage is low—1 technician per 5,000 farms. Can the coverage be increased or can other district-level actors be empowered and trained to support them?
- Compensation procedures and rules were not clear to everyone—informing farmers who are not members of associations is especially challenging.
- Knowledge gap: What is the impact of different lengths of re-stocking bans and different timing for compensation payments? Early payment lifts immediate stress, but might be used for consumption or alternative livelihood activities if the re-stocking ban is still in place. Compensation payments after the end of a re-stocking ban might make it easier for farmers to use money on poultry farming, but how do they meet their immediate survival needs in the meantime?
- So far, experience is limited to outbreaks on big commercial farms in the south of Ghana. The future may show how the system can react to outbreaks in more remote areas and less commercialized settings.

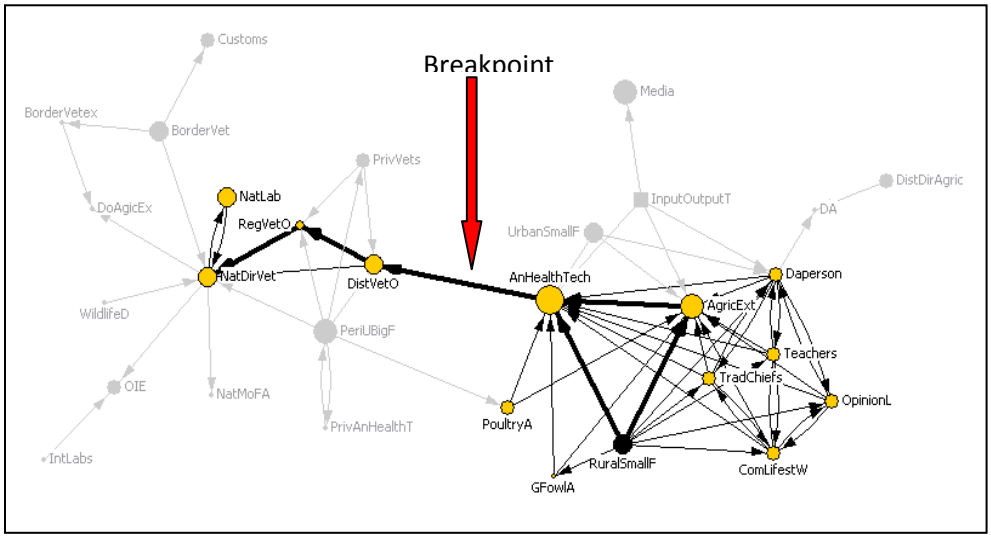

Figure 1. A potential breakpoint in communication flows in Ghana.

Ethiopia

The participants pointed out a number of challenges that either call for more research (knowledge gaps) or changes in institutional organization and in the actual response on the ground, including:

- An overly complex coordination structure for the response. There are a number of coordinating bodies with their own bureaucratic requirements—including national veterinary services, regional and wereda bureaus of agriculture —that might delay the necessary action.
- Logistical problems: shortage of all materials (disinfectants, rubber gloves, etc.) needed for action in response to the economic situation and market restrictions. Laboratories fill the gap since Ethiopia was chosen as a location for the regional reference lab for East Africa, which led to major investments in lab and human capacity; however, this would not be sufficient in case of a more severe, larger-scale outbreak.
- Whether or not information about an outbreak in the rural areas reaches the national level in a timely manner. This depends on who the farmer chooses to contact first, as some rural actors (traditional and modern animal healers) do not tend to report problems to officials.
- The wet market (where live animals are sold) is not as integrated into the information and response system as the different kinds of farms are. An outbreak on the wet market would rarely get reported, as traders have little information and few incentives (no compensation) to report the problem. Furthermore, there was a lack of regular market inspections and traders had a low level of knowledge about appropriate behavior in case of a suspicious death of birds in the market.

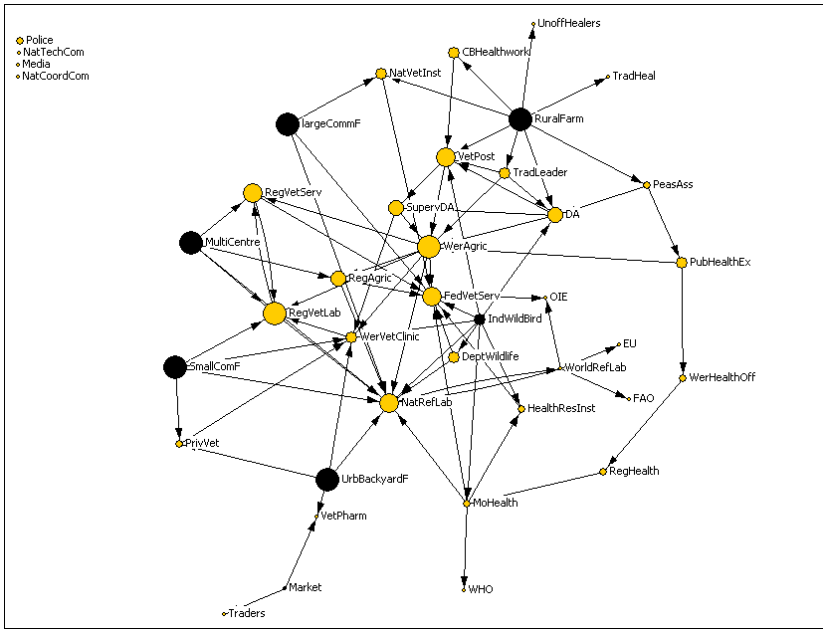

Figure 2: Flow of information about outbreak in Ethiopia

size of node = influence of actor on effective flow of information; black nodes = source of outbreak.

Kenya and Nigeria

- In Kenya, the participants pointed out the weak link between the Director of Veterinary Services and the media as the main bottleneck that might delay the reporting of a suspected outbreak. This link should be strengthened for the exchange of correct information as the media has a big influence in public communication and sometimes gave wrong information with disastrous consequences.
- In Nigeria, the participants pointed out delays in the reporting of test negative samples and an overall lack of feedback to those not directly involved in the outbreak, specifically, traders and poultry associations contribute to slow response with a suspected outbreak.

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Acknowledgement: This brief has been extracted from the inception workshop proceedings held in Ethiopia, Ghana, Kenya, and Nigeria, all available on www.hpai-research.net. Special thanks are due to the participants of the disease network mapping exercises and to following facilitators: Eva Schiffer and Clare Narrod (Ethiopia and Ghana), Paulo Duarte and Clare Narrod (Nigeria), Serge Nzietchueng and Sam Okuthe (Kenya).

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