

# PARTICIPATORY ACTION RESEARCH ON AVIAN FLU COMMUNICATION: FINDINGS FROM BURKINA FASO

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Women working on the seasonal calendar

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## ACRONYMS

AED	Academy for Educational Development
CSPS	Health and Social Development Center
OIE	World Organization for Animal Health
NGO	Non-Governmental Organization
HPAI	Highly Pathogenic Avian Influenza
UNICEF	United Nations International Children's Fund

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## A. INTRODUCTION

### 1. BACKGROUND

The West and Central African communities are facing the very real menace of avian influenza because it is anticipated that the spread of the virus will extend to the region's interior in the near future. Cases have been reported in Burkina Faso and several other African countries. In order to ensure proper preparation for the controlled and contained epidemics, wider epidemics and human pandemics, UNICEF is in the process of facilitating a coordinated process to put in place communications and community mobilization interventions to respond to these three scenarios.

To date, there is little documented information on the social, cultural and economic implications of each of the scenarios mentioned above for communities in West and Central Africa. It is important to understand how avian flu could affect multiple aspects of their lives, such as their health, means of livelihood, etc. Because Avian Flu affects several aspects of the life of a society (human health, animal health, livelihoods), it is necessary to take a broad perspective to understand how communities can react and respond and to assess the needs and resources of the community. By using the Participatory Action Research (PAR) approach that is driven by community knowledge and skills, communities can begin to develop their own action plans to confront avian flu.

As an integral part of actions to combat avian flu, communications offers a range of useful tools to understand the resources and needs of communities. It is important to understand that communications cannot be reduced to a simple dissemination of information and messages; rather it is essential to examine how the communities identify the problems and determine the most appropriate actions.

The Academy for Educational Development (AED) was among the first to develop strategies for communicating about avian flu and it has broad experience in the use of the PAR approaches.<sup>1</sup>

In Burkina Faso, faced with the confirmation of an outbreak in Nigeria of the outbreak of avian flu H5N1 on February 6, 2006, it appeared necessary to take prevention and response measures.

According to the animal health service, the illness could enter Burkinabe national territory by the different paths listed below:

- Illegal introduction of poultry, bird products and byproducts originating in or coming from infected countries;

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<sup>1</sup> de Negri, B., Thomas, E., Ilinigumugabo, A., Muvandi, I., and Lewis, G. Empowering Communities: Participatory Techniques for Community-Based Programme Development. Volume 1(2): Trainer's Manual (Participant's Handbook). Nairobi: The Centre for African Family Studies (CAFS), in collaboration with the Johns Hopkins University Center for Communication Programs and the Academy for Educational Development.

## COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

- Migratory birds: Burkina Faso is an at risk country because it is a haven for migratory birds coming from Europe which creates a serious threat. In fact, migratory species, specifically water birds seek out wetlands as place of refuge. Burkina Faso has three important international wetlands (Ramsar sites): the W national park, the hippopotamus pond, the Oursi pond, and sixteen other important wetlands situated in the Sahel, the Mouhoun Belt, the High Basins, the Cascades and the dams of Ouagadougou and its surroundings where water birds are found.
- Illegal importation of products contaminated by excretions or secretions of sick or infected birds;
- Movement of people (returning from a visit to an infected country);
- On April 3, 2006, Burkina Faso notified the l'OIE of the presence of an outbreak of the Highly Pathogenic Avian Flu (HPAI) H5N1 in its country in the village of Gampela; in a tourist camp located around 15 kilometers from Ouagadougou.
- A Provincial Order declaration of infection led to the implementation of sanitary prophylaxis operations, including the slaughtering of all domestic birds and the destruction of bird products in the villages of Gampela and Barogo, which were placed in a quarantine zone, the exception of four modern poultry farms which were counted as confined poultry farming operations.
- No human case was detected among inhabitants and the workers in the camp, who were placed under medical surveillance, and no further outbreak of the illness among poultry was declared after the first notification.

According to the statistics of the farming service, 239 farmers were affected, with the following results:

### **Slaughtered and destroyed**

Chickens: 5735  
Guinea fowl: 48  
Ducks: 34  
Turkeys: 2  
Pigeons: 343  
Eggs: 1083

Following the confirmation of the existence of another outbreak of bird flu, in Tenado, in May 2006, an official mission visited the locale. Two main activities were carried out in the field:

- Census and slaughter
- Disinfection
- Raising awareness of the local population

Unlike in Gampela (where the communities had to face a menace which came from a camp), in Tenado, the situation was a case of avian flu which caused a high mortality rate among poultry.

The proper government authorities intervened from May 24 to June 2, 2006.

According to animal health service statistics, the result was the following:

- Number of affected farmers: 220
- Number of facilities and materials disinfected, by type:
  - Henhouses: 288
  - Laying places: 145
  - Cages: 50

Culling and destruction of the following:

- Number of affected producers: 136
- Number of chickens slaughtered: 1020
- Number of guinea fowl slaughtered: 340
- Number of turkeys slaughtered: 3
- Number of pigeons slaughtered: 52
- Number of eggs destroyed: 531

Difficulties identified by the mission included:

- Resistance by some farmers in sector 2 of the administrative district (*commune*)
- Concealment of large numbers of poultry, primarily adult birds
- Low numbers of turkeys presented since the amount of compensation for this species did not appear to meet the expectations of the people
- Difficulties in capturing the guinea fowl and turkeys

National Highly Pathogenic Avian Influenza (HPAI) Prevention and Response Plan

- On February 15, 2006, the Government of Burkina Faso approved the “Burkina Faso National Highly Pathogenic Avian Influenza Prevention and Response Plan (the Plan)”, of which the estimated budget of 5.681 billion FCFA for a two year period, benefited from an annual grant of 300 million FCFA (including the budget to assist HPAI victims) and ten all-terrain vehicles.

The Plan is organized around common objectives between the human and animal health sectors, notably in terms of information and awareness raising, the early detection of cases of HPAI and the prevention of their spread, and sharing.

## 2. STUDY OBJECTIVES

In accordance with the terms of reference, the objectives are the following:

1. Study community members' understanding of the potential impact of avian flu on various aspects of their lives, through a process guided by the community using participatory research methods
2. Study the relations and connections between the social, cultural and economic factors of avian flu and its spread in the community putting the accent on opportunities or obstacles to the mobilization of resources or the changing of practices to prevent or reduce the negative impacts of an occurrence.
3. Study the existing communications resources which could be mobilized and feasible interventions which could be carried out with local resources to prevent avian flu, such as community actions to minimize the impacts of bird flu, and the most effective and credible sources of communication.

## 3. METHODOLOGY

### 3.1 DATA COLLECTION METHODS AND TOOLS



The choice of data collection methods and tools was dictated above all by the desire to guarantee a broad participation of the populace in carrying out the study. Following this logic, the participatory research method was used to carry out the study. The participatory tools used to collect the data are the following:

Bean quantification: Revenue

**Table 1: Data collection tools**

Tools	Groups using the tools				
	Poultry Farmers	Leaders	Women	Men	Youth
Community maps			X	X	
Transect walk	X	X	X	X	X
Participant observation	X				
Story telling		X			
Seasonal calendar			X	X	X
Focus group discussions			X	X	X
Venn diagram			X	X	X
Quantifications			X	X	X
Flow chart of the causes and consequences of avian flu			X	X	X
Matrix Ranking			X	X	X

The participant observation was carried out with the farmers who had a lot of experience in raising poultry. The story telling was carried out with resource persons, adults who had a lot of experience in the past history of the community being surveyed. The farmers and the resource persons were identified by village facilitators.

These participatory tools were supplemented by in-depth interviews with the following resource persons:

**Table 2: Categories and number of persons having in-depth interviews**

Resource Persons	Number at Tenado site	Number at Gampela site
Poultry sellers	2	1
Poultry Farmers	2	2
Community leaders	2	2
Youth	2	2
Women leaders	2	2

### 3.2 DATA COLLECTION SCHEDULE

The data collection was carried out on the following Schedule:

- Gampela site : October 9 – 14, 2006
- Tenado site: October 19 – 23, 2006

The details by site and by tools are provided in the table below:

**Table 3: Schedule for data collection in the field**

Tools	Site de Gampela	Site de Tenado
Community Mapping	10/09/06	10/19/06
Transect walk	10/09/06	10/19/06
Participant Observation	10/10/06	10/20/06
Seasonal Calendar	10/10/06	10/20/06
Focus group discussions	10/11/06	10/21/06
Venn diagram	10/11/06	10/21/06
Quantifications	10/11/06	10/21/06
In-depth interviews	10/12/06	10/22/06
Story-telling	10/12/06 and 10/13/06	10/22/06 and 10/23/06
Flow chart of causes and consequences of avian flu	10/13/06	10/23/06
Matrix Ranking	10/13/06	10/23/06
Preparation for restitution to the people	10/14/06	10/24/06
Restitution with the people	10/14/06	10/24/06

### 3.3 COMMUNITY INVOLVEMENT PROCESS

The process of involving the community began at the same time as preparations for data collection in the field. It began with the choice of community facilitators. The facilitators are resources persons who are part of the communities where the studies took place. They are people who have the trust of the people, chosen in close collaboration with the *chef de village* (village chief) in Gampela and the *chef de terre* (land chief or earth priest) in Tenado. Two (2) facilitators were chosen for each site. The task of the facilitators was to:



PAR meeting: Community mapping

- Facilitate the mobilization of the people for the study,
- Follow the team during the entire duration of data collection at the site,
- Participate in the data collection process by assisting the teams in implementing the various data collection tools.

- Participate in compiling the data each evening;
- Participate in preparing the compensation for the people. Note that besides the two facilitators, the team invited two representatives of each group (women, men and youth) to participate in the preparation of the restitution.

In order to achieve different tasks, just before the collection of the data, the community facilitators benefited from an information session on the study, methodology and tools used.

The involvement of the community includes also the use of the participant research method, which allows for greater participation of the community, across groups of women, youth, and men, in gathering data.

### 3.4 STUDY SITES

#### 3.4.1 Site Selection Process

The choice of survey sites was done in close collaboration with the authorities at the Ministry of Farming and Animal Resources. Based on the criteria established in the terms of reference (one rural and one peri-urban site) the team responsible for the study in Burkina Faso proposed sites in Gampela and Tenado to the ministry authorities who accepted them. Gampela is the peri-urban site and Tenado is the rural site.

#### 3.4.2 Geographic Location of the Sites

##### a) Tenado

Administrative jurisdiction: Tenado is a rural commune (rural district). As a result, it is run by a municipal council whose authority extends over all of the 19 villages and *quartiers* (districts or sectors) linked to it. It is located about 150 km from Ouagadougou, in the center-west region. National Route 14, which links Koudougou and Dédougou and crosses the rural commune in the department for 35 km. It is the only dirt road which is usable all year.

**b) Gampela:** The village of Gampela is located 17 km west of Ouagadougou

#### 3.4.3 Demographic Characteristics

**Tenado:** According to the 1996 census, the latest to date, the commune of Tenado has 14,502 inhabitants including 7,769 men and 6,733 women.

The entire department and commune of Tenado include 23 schools of which 2 are satellite schools. In 2004-2005, the total school attendance rate was 32.6% for girls and 41.2% for boys for an average total of 37.5%.

At the commune level, there are four working wells, although the need, based on the size of the population, is for 44 wells.

**Health:** there is a single Health and Social Development Center (CSPS) with 4 health officers (a registered nurse, an accredited nurse and two itinerant health agents).

**Gampela:** According to the 1996 general census of the population, the village has 1650 inhabitants, including 808 men and 842 women.

**Educational Infrastructure:** the village has a school with six classrooms. The number of students during the 2003-2004 school year was 280, of whom 122 were boys. There is a literacy center which serves about 70 people per year.

**Health Infrastructure:** there is a facility that was built in 2003; but it is nonfunctional due to the lack of equipment and staff being reassigned elsewhere. Sick persons go to facilities in Lombila and Nioko II.

**Water infrastructure:** there are nine working wells, five wide diameter wells polluted by the waste water from a tannery.

### 3.4.4 Means of Subsistence of the Local Population



Chickens and pigs in close contact

**Tenado:** Agriculture is practiced by 95 % of the population. The main crops are grains. Most of the people also raise animals. Animal farming includes cows, goats, sheep, and pigs, as well as poultry (hens, guinea fowl and a limited number of turkeys and ducks).

The inventory taken in 2000 for the entire department counted a poultry population of 35,000. In 2005, a census estimated a poultry population of 123,013, which appears to suggest strong growth in the locale.

As for disease outbreaks which affect poultry, Newcastle disease occurs every year.

**Gampela:** Agriculture is the dominant economic activity. There is no counter season agriculture.

The animal farming is a practice which is present in various households. It faces a problem of vaccination coverage.

According to the estimates made by the people themselves, the number of livestock in 2004 was:

- cows : 2420
- sheep: 8540
- donkeys : 600
- pigs : 2010
- poultry:10,070

Animal farming is the principal income generating activity for women.

### 3.4.5. Distribution of Types of Farmers and Approximate Number of Poultry by Type

#### a) Gampela

Category of Poultry farmers		Number of poultry	Number of Poultry Farmers	
			Before Epidemic	After Epidemic
Traditional	Small	5 to 20	Majority of the people	
	Large	60 to 100	40	10
Modern (Not affected by the slaughters)		(Not specified)	12	

#### b) Tenado

Category of poultry farmer		Number of poultry		Number of Poultry Farmers	
		Before Epidemic	After Epidemic	Before Epidemic	After Epidemic
Traditional	Small	≥ 10	1-5	Majority of the people	
	Large	≥ 100	15-30	20	13

Unlike Gampela, there is no modern poultry farming; however the larger farmers were severely affected by the epidemic.

#### Avian Flu Situation

At the time of the study, avian flu was well under control and contained at the two sites. The measures taken to control the movement of poultry had been lifted and the people had been given the approval to restart their poultry farms.

## B. STUDY RESULTS

### 1. CONTROLLED AND CONTAINED AVIAN FLU SCENARIO

#### 1.1. START AND EVOLUTION OF THE SITUATION AT THE TWO SITES

##### Box 1: Evolution of the epidemic at the two sites

###### Gampela

Avian flu was officially declared in Gampela at the beginning of the month of April after samples taken in the poultry farm of a tourist camp tested positive for the virus H5N1. The local government authorities and technical services of the Ministry for Animal Resources took advantage of an assembly in the market to announce the news to the people. The information covered the need to carry out a precautionary slaughter of poultry within a 3 km radius around the infection site. Thus Gampela's poultry farmers did not experience the high mortality rate in their henhouses as a result of avian flu. The slaughter measure was taken in order to avoid the spread of the disease in the village. Only the free ranging poultry from the traditional poultry farms were affected by the slaughters. As soon as they were informed of the decision to make the precautionary slaughters, the Gampela people showed their discontent to the authorities. They were unhappy not only because of the slaughters but also because the information did not come to them by the usual channel, which is the traditional authorities, especially the village chief. Certain farmers tried to get out of the slaughters by enclosing their flocks (the slaughter order was only for free ranging birds). But this strategy failed. After a meeting with the administrative and technical authorities, the people accepted the slaughters which began at tourist camp's poultry operation which was contaminated with avian flu. The people accepted the slaughters not only thanks to the efforts to explain the situation made by the government authorities, but also by the persuasive efforts of people originally from the village who now reside in Ouagadougou, and who were better informed about the illness. After the slaughters, each farmer received 1500 F per bird (including chicks), and 25 F for each egg destroyed as compensation. The henhouses were also disinfected. Control measures were put in place by the administrative authorities to avoid movement of poultry between the village and the exterior.

###### Tenado

Before the official announcement of the presence of avian flu in the village, the poultry farmers in Tenado were confronted with a high mortality rate among their flocks. In order to understand the cause of this mortality, the animal health technical service took a series of samples in a confined farm of laying hens. These specimens tested positive for the H5N1 virus and avian flu was officially declared in Tenado during the second half of the month of May. According to the people, between the time samples were taken and the announcement of the presence of bird flu, at least two months had passed. At the moment of the avian flu announcement, there were no longer any deaths in the village's poultry farms. This situation raised skepticism among the farmers as to the presence of avian flu in Tenado. The results of the test were first announced to the owner of the farms where the specimens were taken. Then, the prefect and the animal health technical service met with the district leaders in the market to officially announce the presence of avian flu in the village, and of the necessity to carry out slaughters in order to contain the disease. The farmers did not welcome the slaughter measures; certain poultry farmers killed their own flocks in order to eat them, while others refused to allow the slaughtering teams to come into their houses. A meeting with the *chef de terre* and the prefect was needed in order to get the farmers to accept the slaughter of their poultry. The people said they would have been more willing to accept the slaughter order if the information had come from the *chef de terre*. The compensation rates relative to the loss of poultry were as follows: 1000 F per chicken, 1200 F per guinea fowl, 5000 F per turkey and 25 F per egg. The henhouses were also disinfected and the authorities took measures to control the entry and exit of poultry from the villages.

Comparison of the elements of the evolution of the situation in Gampela and Tenado

Box 2: Comparison of the evolution of the two sites

**Gampela**

1. Test in a tourist encampment where poultry is raised.
2. No apparent sign of the disease in the village poultry farms; the farmers did not see the symptoms of avian flu in their farms.
3. Official information about the presence of bird flu was given out in a general meeting of the people and a decision was taken to undertake a preventive slaughter of all birds within a 3 km radius around the infection site.
4. Peoples' reaction was to oppose the slaughter measures.
5. Intervention by the authorities and technical services and people originally from the village who now reside in Ouagadougou in order to change peoples' minds

**Tenado**

1. Test in a confined farm of laying hens. Before the test there was a report of high mortality rates among the poultry farms in the village.
- 2 Two months went by before the results of the test were announced, during which time the deaths had stopped at the farms.
3. Official announcement of the test results to the people in the village market, and the decision to carry out a slaughter of all the poultry in the village.
4. The people reacted in opposition to the slaughter measures.
5. Intervention by the chef de terre and the prefect in order to change the minds of the farmers who did not want to accept the slaughter of their birds



Chickens in the yard

## 1.2 KNOWLEDGE AND APPRECIATION WITHIN THE COMMUNITY OF THE POTENTIAL IMPACT OF AVIAN FLU

### 1.2.1 Knowledge, Perceptions and Concerns of the Community Concerning Avian Flu

#### a) Local name for and knowledge of the signs and symptoms of avian flu

Table 4: Name, signs and symptoms of avian flu according to the people

Local name/ Signs/ Symptoms	Gampela				Tenado			
	Men's group	Women's group	Youth group	Poultry Farmers	Men's group	Women's group	Youth group	Poultry Farmers
"Noukoumtoaga" (high mortality rate among chickens)	X		X	X				
"Kitjumanbeyolo" (bad hen disease)					X		X	X
Rapid effect of avian flu			X		X	X	X	X
Dark (blackish) bodies and beaks of chickens dead from avian flu					X		X	
Mortality rate of wild birds : vultures, crows			X				X	

The populations of Gampela and Tenado made a distinction between avian influenza and other poultry illnesses. Each of the two communities created a local name to refer to avian flu: "Noukoumtoaga" (high mortality rate among chickens) for Gampela and "Kitjumanbeyolo" (bad hen disease) for the Tenado community. These two names which accent the dangerousness of the avian flu for poultry came from the groups of men, youth and poultry farmers.

Because they had been directly exposed to the high mortality rates of poultry due to avian flu, all the groups surveyed in Tenado highlighted the rapid nature of avian flu as compared to other poultry diseases: "With regular diseases, chickens can take 5-7 days to die, but with avian flu, it's like someone has poisoned the entire henhouse; many chickens die suddenly, in 30 minutes, 30 or more chickens can die at the same time. Sometimes the chickens can get out of the henhouse, one thinks they are not sick, and then shortly afterwards they start dying in great numbers" (Male farmer from Tenado).

The rapid effect of avian flu was also noticed by the youth of Gampela. Note that the Gampela poultry farmers were not faced with high mortality rates among their flocks from avian flu. They

were subject to the preventive slaughters. The information about the high mortality came from the media and from word of mouth.

Moreover, according to the Tenado community, the chickens which died from avian flu had a skin that was darker than usual. This symptom was only noticed by the group of men surveyed.

Another sign of avian flu was only noticed by the youth at two sites: the deaths of wild birds, primarily vultures and crows.

**b) Awareness of the risks of infection of humans by animals**

**Table 5: Risks of avian flu infection according to the people**

Sites	Categories	Avian flu can be transmitted from animals to humans	Contamination can occur by eating a contaminated birds	Contamination can occur from handling sick poultry	Contamination can occur from handling chicken waste	Contamination can occur from handling raw poultry meat	Contamination can occur from eating insufficiently cooked poultry
Gampela	Male Group	X	X				
	Female Group	X	X				
	Youth group	X	X				
	Farmers	X	X	X			
	Chicken vendors	X	X				
	Community Leaders	X	X				
	Women leaders	X	X				
	Youth	X	X				
Tenado	Male group	X	X				
	Female group	X	X	X		X	
	Youth group	X	X				
	Farmers	X	X				
	Chicken vendors	X	X				
	Community Leaders	X	X	X			
	Women leaders	X	X				
	Youth	X	X				

No matter the group (men, women, youth, and vendors); in both Gampela and Tenado, the people are aware of the risks of transmission of avian flu from birds to humans. Moreover, according to the groups surveyed, this is one of the principal characteristics which differentiates avian flu from other poultry diseases. The populations of the two villages are very afraid of human contamination “because we know that avian flu exists in the world and that it can contaminate human beings, we are afraid” (Men’s group in Gampela).

However, in both Gampela and Tenado, for all the groups surveyed the transmission of avian flu to humans is due above all to consumption of infected poultry: “Before the avian flu we ate dead chickens and when a chicken was sick we could kill it to eat it because we thought it would not get well. The large dead or sick chickens were eaten by everyone and the small chickens were eaten only by the children. But when the avian flu arrived, we stopped eating sick or dead chickens because we were afraid of being infected with avian flu. Today many people eat sick or dead chickens because the avian flu has gone” (Men’s group in Tenado).



At the two sites, the people have not perceived very well the risks of infection linked to handling poultry. Only a few poultry farmers in Gampela spoke of their fear, during the avian flu outbreak, to come in contact with the poultry, because of the worry of infection. Similarly, in Tenado, one man spoke of handling poultry as a means of transmitting avian flu to humans. “I heard on the radio, well before there was talk of bird flu in Tenado, that if someone touches a chicken that is already sick, he can become infected with avian flu.” (Poultry farmer in Tenado).

Chickens in close proximity to children and food

In addition, the insufficient cooking of raw meat is not well perceived as an issue by the people. Only the women’s group in Tenado referred to this mode of infection.

Also, the handling of feces and raw poultry meat as a source of infection by avian flu was not recognized by the communities at the two sites. When a member of the community washes his hands or his entire body after handling uncooked chicken meat or when washing the henhouse, it is not for fear of contamination from bird flu, but to make the unpleasant odor of feces or blood go away: “When one cleans the henhouse one smells bad, it is not good to walk around smelling bad so one has to wash oneself” (Poultry farmer in Gampela). Besides the odor of the feces, the farmers wash after cleaning the henhouse in order to avoid respiratory illnesses linked to dust. It should be noted that hand washing is generally done without soap.

The result is that certain groups are more exposed to the risks of infection:

- children who come into contact with the feces, especially in Tenado, because there they are the ones in charge of cleaning the henhouses ;
- Also children because they can eat birds that are insufficiently cooked, unbeknownst to adults.

- Men and youth because they are in charge of plucking and cutting up the poultry for cooking; but also during transportation and marketing of the poultry.
- Women and young girls during the handling of poultry meat before it is cooked;
- Poultry sellers during the transport and selling of poultry.

**c) Potential sources of transmission for avian flu to poultry**

**Table 6: Sources of transmission of avian flu to poultry**

Sources of transmission	Gampela			Tenado		
	Men's Group	Women's group	Youth group	Men's Group	Women's group	Youth group
Wind and dust	X	X	X		X	X
Migratory birds and other wild birds	X	X	X	X	X	X
Introduction of foreign poultry	X	X	X	X	X	X
Consumption of contaminated water by the poultry			X	X		
Household trash near housing			X			
Consumption of infected dead wild birds	X					

Potential sources of avian flu transmission to birds cited by the populations at the two sites are:

- Wind and dust;
- Migratory birds and other wild birds;
- The introduction of foreign poultry ;
- Consumption of contaminated water ;
- Household waste near housing ;
- Consumption of the carcasses of dead infected wild birds ;
- The wind was cited by all the groups at the two sites with the exception of the men's group in Tenado. According to the people, the wind carries dust and sends the microbes into the henhouses infecting the poultry.
- Migratory birds and other wild birds were cited as potential vectors for avian flu by all of the groups surveyed at the two sites. For the young people in Gampela and the men of Tenado, the migratory birds infect the poultry through contaminated water. The men in

Gampela think that the infection comes from eating the carcasses of dead migratory birds and other wild birds. Nearly all the groups linked the infection by migratory birds and other wild birds to the free wandering around of the poultry and thus to the traditional method of raising poultry which puts poultry in contact with contaminated water supplies, notably the water of ponds, rivers and dumps.

- Finally, at both Tenado and Gampela, all groups cited the introduction of foreign poultry into the village as a potential source of avian flu transmission. The foreign birds could be introduced not only by poultry vendors, but also by travelers and poultry farmers. The women's and men's groups in Tenado especially blamed the importation of pure breed chicks as the primary potential source of avian flu. It should be noted that in Tenado, the specimens which tested positive for the H5N1 virus were taken from a farm of pure breed hens imported from Europe.

**Conclusions:** the peoples of Tenado and Gampela have a rather clear understanding and perception of avian flu and the danger it presents. A difference between the two sites: the people of Gampela have a theoretical knowledge of the disease through the media and information supplied by the authorities. In Tenado, the people were directly confronted with the death of their poultry. Their apprehension of the disease is more real.

### 1.2.2 Community Understanding of the Potential Impact of Avian Flu

The different uses for chickens cited by the groups and individuals surveyed are the following: sales, sociocultural ceremonies, gifts and one's own consumption

#### a) Understanding of the potential impact on the means of subsistence

In Tenado and in Gampela, almost all of the households raise poultry, primarily chickens and guinea fowl: "In our village, a man cannot live without chickens, everyone has a henhouse at their house; the chickens are very important for the family. My farm is my office, that's how I earn a little bit of money" (Youth group in Tenado). Moreover, in the two communities, household poultry belongs mainly to the husband. Their ownership by women and children is usually marginal. The head of the household can use the women's or children's' poultry without their consent. This situation does not motivate the women and children to have large numbers of poultry. Only widows who are no longer under the authority of a man can have their own poultry and dispose of them as they please. Otherwise, the husband is the primary person responsible for raising the poultry and managing the household's poultry. He handles feeding them, watering them and providing health care for the poultry. Other members of the household (women and children) get involved generally in the task of taking care of the poultry only in the household head's absence or if he ask them to do it.

However, it should be noted that in Tenado, the cleaning of the henhouses is done exclusively by children aged 6-8 years old. This situation is explained by the design of the henhouse, which has a tiny opening for a door that only children can fit through. This small opening is made in order to protect against theft of birds which is very frequent in Tenado.

According to the groups and persons interviewed, the decisions for the various uses of household birds are taken by the husband. The poultry is primarily raised for sale. The raising of chickens is the second means of subsistence in these households after agriculture. It is one of the main sources of monetary income for men. Income from the sale of poultry is primarily used for school fees, health expenses and purchases of foodstuffs.

Sources of household income are classified as follows:

**Box 3: Household income sources**

In Gampela	In Tenado
<p>a) <u>Among women</u>: - Collection and sales of aggregates (sand, gravel, stones): 25.83%. – Sales of dolo (millet beer): 23.61% - Raising animals (including raising poultry): 22.22% - Petty trading (spices): 15.27%. – Purchase and sales of grain: 12.22% - Sales of grain produced by the household: 0.008%.</p> <p>b) <u>Among men</u>: - Sales of grain produced by the household: 30.83%. – Poultry farming: 29.58%. – Other types of animal farming: 28.33%. – Collection and sale of aggregates: 11.25%.</p> <p>c) <u>Among youth</u>: - Collection and sale of aggregates: 33.33%. – Sales of grain produced by the household: 23.15%. – Sales of wood: 23.14%. – Raising animals (including raising poultry): 23.29%.</p>	<p>a) <u>Among women</u>: - Agriculture: 32.92% - Raising pigs: 29.16% - Raising poultry: 25.0% - market gardens: 12.92%.</p> <p>b) <u>Among men</u>: - Raising poultry: 33.89%. - Agriculture: 27.78%. – Market gardens: 17.22%. – Raising small and large ruminants: 15.55%. – Petty trading: 5.55%.</p> <p>c) <u>Among youth</u>: - Agriculture: 35.42%. – Raising poultry: 27.5%. – Market gardens: 27.92%. – Raising small ruminants: 9.58%</p>

Besides poultry sales, poultry, especially chickens, are used for religious practices and sociocultural ceremonies: marriages, funerals, etc. Giving of poultry as gifts to friends and relatives is also done frequently in the communities of Tenado and Gampela. The household poultry is also used for household consumption, but this last use is marginal. Poultry is primarily consumed for holidays and sociocultural ceremonies.

All the groups and persons surveyed in the two sites perceived avian flu through the risk to human infection, but also through the loss of poultry because of the mortality rates and the slaughters. Avian flu thus can deprive households of an important source of income, which can lead to problems with expenses for health care, education and purchase of food, etc.

The proportion of income dedicated to each of these uses is shown below:

**Box 4: Proportion of income devoted to various uses**

In Gampela	In Tenado
<p><u>Among men</u> – Children’s education: 34.10% - Health care: 22.6% - Clothing purchases: 21,30% - grain purchases : 19.5% - Spending on holidays and ceremonies : 2.5%</p>	<p><u>Among men</u> - Education : 43.33% - health care: 24.44% - purchase of food: 18.33% - Clothing: 8,33% - Purchase of animals for raising: 5%</p>
<p><u>Among women</u> – Purchase of grain and other food staples: 44.2% - Education: 23.46% - health care: 19.35% - Clothing purchases: 13.0%</p>	<p><u>Among women</u> - Education: 34.58% - health care: 29.16% - Purchase of foods/spices: 20.41% - Clothing purchases: 15,83%</p>
<p><u>Among youth</u> – health care: 25,62% - Education: 21.40% - Personal care products: 20,56% - Maintenance/repair of bikes/motorcycles: 18.70% - Clothing purchases: 10.34% - Food purchases: 3,38%</p>	<p><u>Among youth</u> – health care: 38.75% - food purchases : 33.75% - Education: 27.50%</p>

As might be expected, the large chicken farmers and vendors are the most affected by the economic consequences of avian flu. The former are affected because they own relatively high quantities of poultry. The latter are affected because the sales of poultry constitute their primary means of subsistence, sometimes in collaboration with agriculture.

Because they raise smaller numbers of poultry, the women and youth are less directly affected by the economic consequences of avian flu. They are indirectly affected because the income that comes from raising poultry helps pay for household expenses.

**b) Understanding of the potential impact on health**

For the different groups and persons surveyed at Tenado and Gampela, the appearance of avian flu will weaken the state of health of the population. According to them the potential impact of avian flu on their health affects them on two levels: human infection and the difficulties of access to health care.

The communities of Tenado and Gampela are very worried about the possibility of transmission of the avian flu virus from birds to humans. According to the different groups and persons surveyed, the appearance of avian flu in their villages can lead to numerous human infections, which would increase the mortality rate and provoke panic among the population. The men of Gampela think that the human infections will lead to a problem of taking care of sick people because the health facilities would become saturated.

To minimize the health impact of avian flu, most of the groups surveyed think that medicines should be found to vaccinate the people and heal the sick people. Only the men of Tenado did not explicitly propose this measure. This group proposed isolating sick people to keep them from infecting others.

Besides the human infection, the different groups surveyed think that the appearance of avian flu could lead to difficulties for households to have access to health care. These difficulties would be due to the drop in family incomes due to the loss of poultry to avian flu.

The portion of income from poultry which is allocated to health expenses is estimated by the various groups as follows:

**Table 7: Proportion of income from poultry allocated to health care**

Sites	Men	Women	Youth
Gampela	22.60%	19.35%	25.62%
Tenado	24.44%	29.16%	38.75%

**c) Understanding of the potential impact on food security and nutrition**

The groups and individuals interviewed in Tenado and Gampela see the impact of avian flu on food security and nutrition on two levels: insufficient supply or even absence of poultry for consumption, and above all insufficient family income to buy foodstuffs.

The loss of poultry to avian flu deprives the people of an important source of protein. This impact of avian flu was perceived by most of the groups and individuals interviewed. For the men of Gampela and the youth of Tenado, the appearance of avian flu will bring a “ban on consumption of poultry” or “unavailability of poultry for consumption.” The youth of Gampela and the women of Tenado think that the loss of poultry will show itself as a “disruption in the eating habits of the people” due to the absence of poultry in their diet.

Also, most of the person interviewed at Gampela recognized the nutritional value of poultry. According to these people, the consumption of poultry gives strength and blood. Poultry meat also improves children’s growth, and milk production among mothers who have just given birth.

*“When my wife gave birth, I knew she was weak because she had lost blood. Chicken soup gave her blood and her strength back” (Man from Gampela).*

This recognition of the nutritional value of poultry explains why poultry meat is sometimes given to pregnant women or those who just gave birth and to convalescing sick people. Thus, the communities of Gampela and Tenado, through the people surveyed, recognize implicitly that the loss of poultry occurring from avian flu would deprive the people of an important source of protein.

Only the men of Tenado did not explicitly speak of the nutritional value of poultry.

For all the groups interviewed in Tenado and Gampela, the impact of avian flu on food security is also linked to insufficient financial means for buying food products, primarily grain. In effect, the loss of poultry to bird flu means a drop in income in households which will not have enough financial means to buy for example the grain in order to complement their poor harvests. Thus the loss of poultry could expose many households to famine. The portion of the income from poultry that is devoted to food is estimated by different groups as shown in Table 8:

**Table 8: Proportion of income from poultry allocated to food**

Sites	Men	Women	Youth
Gampela	19.5%	44.2%	10.34%
Tenado	18.33%	20.41%	33.75%

**d) Understanding of the potential impact on religious and sociocultural activities**

According to the groups and individuals interviewed, the chicken plays an important role in the religious and sociocultural life of the communities of Gampela and Tenado.

For example in the Tenado community, the social and cultural life is held together by mystical practices in which the chicken plays a central role. The youth of Tenado explained the religious and sociocultural importance of the chicken in these terms:

*“Without the chickens we could no longer carry out our tradition. For example, when someone dies, we are obliged to kill a chicken before the burial. This is the same situation for Christians and animists. Also, it is through chickens that a man can have a woman to marry. For many things in our village, even if you have a million francs to give in exchange, this doesn’t count; what counts is the chicken as our custom dictates. There are several roles that only the chicken can serve among our people: to dig a grave, one must sacrifice a chicken, to build a new house one must sacrifice a chicken, to occupy a new land parcel one is obliged to kill a chicken (Youth group in Tenado)*

According to the people in Gampela, the role of the chicken in traditional religion appears as sacrifices on the occasion of customary celebrations:

- *na-basga* (new year’s celebration for the village chief)
- *tougmdaage* (annual commemoration of the funeral of the founding ancestor of Gampela)
- Sacrifices to ask for rain from the ancestors;
- The *ragnouga* (sacrifices to thank the ancestors for a successful agricultural season)

Besides these customary celebrations, chicken is used in sociocultural ceremonies, such as engagements, weddings, funerals, etc.

The communities of Gampela and Tenado have strongly perceived the impact of avian flu on their religious and sociocultural activities. All the groups and individuals surveyed underlined these difficulties and even the impossibility of doing sacrifices or celebrating customary ceremonies (engagements, marriages, funerals, etc.) in a situation with avian flu, due to the lack of chicken.

The community of Tenado is particularly sensitive to the impact of bird flu on religious practices and sociocultural ceremonies. According to the youth, men’s’ and community

leaders' groups the cultural and religious value of chicken is so important to Tenado that after the slaughter of poultry and establishment of control measures (prohibition of bringing poultry in or out of the village) that many inhabitants went to buy the feathers of living chickens in the neighboring villages to be able to do the sacrifices. In reality, it was an emergency, while waiting for the control measures to be lifted in order to do sacrifices with chickens. The sacrifices done with chicken feathers were provisional sacrifices in order to calm the invisible beings to whom the sacrifices of chicken were made. The traditional healers refused to deliver their results without this promise of a sacrifice using chicken feathers. The people are convinced that without these sacrifices with feathers, the situation would have led to the deaths of several persons in the village. Moreover, the population is convinced that the village lost human lives because many of the families could not make sacrifices due to a lack of chickens.

Also, according to the people of Tenado and Gampela, the losses of poultry following the outbreak of avian flu could lead to a weakening of links of solidarity in the community. In fact, in order to maintain good relations with relatives and friends, friends and family periodically give each other gifts of chicken. These gifts are given especially during celebrations or visits with the family.

### 1.3 SOCIAL, CULTURAL AND ECONOMIC FACTORS AND THE SPREAD OF AVIAN FLU

#### 1.3.1 Status of Links and Interconnections between the Social, Cultural, and Economic Factors and the Spread of Avian Flu in the Communities

**Table 9: Social, cultural and economic factors**

Factors that spread avian flu	Gampela			Tenado		
	Men's group	Women's group	Youth group	Men's group	Women's group	Youth group
Sales of poultry	X	X	X	X	X	X
Gifts and sacrifices of poultry					X	
The wandering of free ranging poultry	X	X	X	X	X	X

Factors that favor the spread of avian flu, as identified by the various groups and individuals interviewed, can be grouped into two categories:

- Factors which encourage movement of poultry inside and outside the community;
- Factors linked to poultry farming practices.

#### a) Factors linked to the movement of poultry

According to the perceptions of the groups and persons surveyed, factors which favor movements of poultry are: sales of poultry, poultry as gifts and sacrifices.

##### *Sales of Poultry*

In both Gampela and Tenado, all of the groups interviewed identified sales of poultry as the principle factor favoring the movement of poultry inside and outside the community. The sales were then identified by most of the groups as one of the principle cause of the spread of avian flu. It is important to note that Tenado has a poultry market which sells not only birds from local poultry farms but also those from other neighboring villages. Also, the poultry from Tenado is sold in the markets of neighboring villages. The poultry



Selling chickens in the market

from Gampela is primarily sold in two neighboring villages and in Ouagadougou. The birds are sold for consumption or for breeding. This latter use favors the spread of avian flu.

### *Poultry used as gifts and sacrifices*

Poultry given as gifts can also become a factor in the spread of avian flu. At both Gampela and Tenado, poultry gifts are part of the cultural traditions of the people. These exchanges of poultry between friends and family favor the movements of poultry between communities leading to the spread of avian flu. It should be noted that no group in Tenado or Gampela explicitly cited gifts of poultry among the factors which can favor the spread avian flu. The groups and individuals surveyed mainly concerned themselves with talking about the introduction of foreign birds as a source of potential introduction and spread of avian flu.

Religious practices and sociocultural ceremonies (engagements, marriages and burials) also favor the movements of poultry and constitute an important factor in the spread of avian flu. All the groups highlighted the importance of chickens in the cultural and religious practices of their communities. Even if they recognize their importance in the functioning of their respective societies, most of the groups interviewed did not identify the cultural and religious role of chickens as a factor that favors the spread of avian flu. This factor was not explicitly identified except by the group of women in Tenado. The other groups merely spoke of the mobility of the population as a factor that favors the introduction of foreign poultry in their locales and thus, the transmission of avian flu.

### **b) Factors linked to the poultry farming practices**

As cited by different groups surveyed, the factors linked to poultry farming practices which favor the spread of avian flu are: wandering of free range poultry, attitudes towards sick birds, absence of reporting cases of the illness, cleaning of henhouses and usage of chicken waste.

#### *Wandering of free range poultry*

In both Gampela and Tenado, the type of free range poultry farming favors the spread of avian flu. In both locations, free range poultry farming is practiced. The poultry are allowed to run freely with little monitoring or attention paid to them. The birds find their food by wandering between the houses in the village and by eating leftovers of the harvested field and the house kitchens. This mode of raising poultry favors contact between birds of different farms in the village and uncontrolled poultry feeding constitute one of the principle potential factors for the spread of avian flu according to the groups surveyed. All the groups surveyed in Tenado and Gampela were able to identify this source of infection that they saw as limited to their poultry's feeding habits (uncontrolled feeding) and to their contact with wild birds. The contact between birds of different farm yards was not perceived as a factor in the spread of avian flu.

#### *Attitudes toward sick birds and reporting*

Attitudes towards sick birds are the second factor in poultry practices which could favor the spread of avian flu. In cases of illness, the poultry farmers do not always automatically consult with the veterinarian immediately. They first give priority to self-medication. It is only after this fails that some farmers will call the veterinarian. However, according to men's groups and youth' groups and farmers at the two sites, there are differences in how different categories of

farmers care for their birds: the large poultry farmers go to the veterinarians regularly. This is explained by the fact that they fear losing their flocks and do not hesitate to call the veterinarian in cases of illness. At this level the economic risk is most important. Among smaller poultry farmers and poultry vendors, veterinary products are not used very often, because they are not considered to be economical.

*"I cannot buy a product for 10,000 F to treat only five hens, I prefer to let them die if they get sick."* (Poultry farmer in Tenado).

This attitude of the farmers towards illnesses among their birds limits the reporting of poultry illnesses to the appropriate authorities, which in turn is an important factor in the spread of avian flu. This factor of spreading bird flu was identified by the men's group in Tenado.

### *Hygiene*

Hygienic practices related to the cleaning of henhouses and use of chicken wastes can also be a factor in the spread of avian flu. In fact in Gampela, the farmers often simply wash their hands after cleaning the henhouse. In Tenado the cleaning of henhouses is done exclusively by children 6-8 years old. In order to prevent poultry thefts, the farmers build henhouses with tiny opening through which only 6-8 year old children can enter. All the groups surveyed in Tenado confirmed that the adults, especially women, made sure that the children wash themselves after cleaning the henhouse. However, in both Tenado and Gampela washing of hands and entire bodies is done without soap. And in all cases, the persons who are responsible for cleaning the henhouses do not change clothes after the operation. Thus the clothing can become a potential source of propagation for the avian flu virus. Also, the waste is spread in the fields which encircle the houses, and is within reach of poultry which can then become infected. In Tenado and Gampela, no group identified the handling and use of poultry wastes as a factor in the spread of avian flu.

### *Mixing of different poultry species*



Chickens and guinea fowl

Finally, in Tenado and Gampela, different species of poultry, especially chickens and guinea fowl are kept together. The same thing occurs for birds bought in the market or in other villages, they are mixed with the rest of the flock without taking any necessary precautions. All these practices constitute factors which lead to the spread of avian flu. Unfortunately, they were not identified by the groups and individuals surveyed. The population only spoke simply of the dangers linked to introducing foreign birds into the village.

### 1.3.2 Short and Long Term Consequences of Avian Flu on Social, Cultural and Economic Factors

**Table 10: Consequences of avian flu on the social, cultural, and economic factors**

Factors related to spread of avian flu	Gampela			Tenado		
	Men's Group	Women's Group	Youth Group	Men's Group	Women's Group	Youth Group
High poultry mortality (loss of all poultry)	X	X	X	X	X	X
No more poultry for sale	X	X	X	X	X	X
No more chickens for sociocultural and religious ceremonies	X	X	X	X	X	X
No more poultry to give as gifts	X	X	X	X	X	X

According to the groups surveyed in both Tenado and Gampela, avian flu has led to a high mortality rate among poultry due to disease and the slaughters. In the final analysis, the groups surveyed thinks that because of the losses of poultry it causes, avian flu will cause the end of giving poultry as gifts and using chickens for religious and sociocultural ceremonies. At the same time, there will be no poultry available to sell.

## 1.4 FLEXIBILITY TO CHANGE

### 1.4.1 Possible Alternatives to Overcome the Consequences of Avian Flu

The communities of Tenado and Gampela (Men, Women and youth) believe that nothing can replace chickens because of their cultural and religious value. In fact chickens are involved in nearly all of the traditional and religious practices.

However, the people think that the poultry could be replaced by other animals as a source of income and protein:

*“If it is in order to sell them and have money, it is possible to replace the chickens with other types of animals, like for example goats, sheep or pigs. But in our culture it is mainly women who raise pigs. We could also have meat by raising these animals. But the gourounsi (ethnic group in Tenado) can not live without chickens for sacrifices; we use chickens to look for medicines (pharmacopoeia)” (Men’s’ group, Tenado).*

To make up for the economic and nutritional consequences of avian flu, the different groups surveyed proposed the actions listed in Table 11:

**Table 11: Actions to overcome the economic and nutritional consequences**

Actions	Gampela			Tenado		
	Men	Women	Youth	Men	Women	Youth
Develop pig farming		X			X	
Develop gardening		X				X
Professional training for youth		X				
Develop sheep and goat farming			X	X		

The groups who proposed it hope that development of sheep and goat farming could be done with training and microcredit financial support to persons interested in this activity.

### 1.4.2 Obstacles and Opportunities to Combat Avian Flu

#### a) Obstacles and opportunities for mobilizing resources

This includes mobilization of organizational, human and material resources.

**Table 12: Obstacles and Opportunities for mobilizing resources**

Type of Resource	Obstacles to mobilizing resources	Opportunities for mobilizing resources
Organizational resources	- In Tenado, a limited number of organizations are active in raising animals; - Numerous organizations are non-functional, they exist but do not carry out any activities; - Non existence of an official organization for youth in Tenado; - Risk of conflicts between delegates, who are elements of the former administrative organization and who have the trust of the people, and the municipal counselors seated after recent elections. The municipal counselors were not identified by the youth of Tenado and Gampela and by the women of Gampela as sources of information that could be trusted; - Limited knowledge among the people about the modes and sources of avian flu infection.	- Existence in Tenado and Gampela of a strong traditional (customary) organization that is very strong and well-respected by the people. This organization is present in all levels of society and in all districts of the villages; - Existence of very dynamic women's groups in Tenado and Gampela. The groups in Gampela were created in order to develop poultry farming; - Existence of a group of animal farmers in the two villages; - Existence of an association of traditional healers in Tenado; - The communities in the two villages expressed the desire to organize themselves to fight avian flu. They are awaiting support and advice in this area; - Existence in Gampela of an NGO capable of mobilizing the poultry farmers
Human Resources	- Very few people in the two villages have knowledge of avian flu; - farmers' level of education and skills is low. Farmers are mostly guided traditional animal raising practices ; - The need to pay for the services of resource persons	- Availability of the village leaders (village chiefs, delegates, noted district dignitaries) for activities to combat avian flu; - Existence in each of the two villages of village vaccinators and veterinary personnel (NGO ASUDEDEC in Gampela and the departmental animal health service in Tenado).
Material Resources	Material resources are very limited in the two villages	The Tenado community has a building, the People's Recreation Center, where most of the village meetings are held. This center could be used for awareness raising meetings

**b) Obstacles and Opportunities for changing current practices**

**Table 13: Obstacles and opportunities for changing current practices**

Practices	Obstacles to change	Opportunities for change
Henhouses with small openings in Tenado	- Many cases of poultry thefts – Insufficient financial means to buy solid doors	- Fear of transmission of avian flu from poultry to humans; - the poultry farmers are conscious of the need to protect children from diseases.
Extensive mode of raising poultry and contact between people and birds	- Traditional practices ; - Needs much more monitoring and attention paid to poultry; - Insufficient financial means to buy poultry feed and construct adequate henhouses ; - Insufficient professional capacities of the farmers ; - Insufficient land to build henhouses (youth and men of Tenado)	- Fear of transmitting avian flu from birds to humans; - Motivation of farmers to change the mode of raising animals; - Existence of confined farms, especially in Gampela; - Existence in Gampela of an NGO which provides support for confined poultry farming (construction of model henhouses, training, advice on how to raise birds, etc.)
Self-medication in cases of poultry illness and an absence of reporting	- Traditional poultry raising practices ; - High cost of treatments using veterinary products ; - Skepticism about the efficacy of certain veterinary products (farmers in Tenado) ; - Veterinary products are not always available ; - With a small flock, treatment with veterinary products is not considered cost effective (farmers and vendors in Tenado); - Farmers are not in habit of systematically reporting poultry illnesses to the veterinarians ; - Insufficient training of the village vaccinators to whom the farmers go for curative care; - Insufficient staff to reinforce sanitary monitoring of poultry ; - Insufficient skills among the farmers to detect illnesses.	- Fear of transmitting avian flu from birds to humans ; - Awareness of the necessity to protect human beings and poultry by providing better care to poultry ; - Motivation of farmers to change the health care given to poultry ; - Large farmers use the veterinary services more often because they are afraid of losing their flock - Existence in each location of village vaccinators who provide help to farmers ; - Availability of numerous veterinary products in the villages (proximity to sources of supply).
Handling of sick birds and sick birds found in houses	- Traditional poultry raising practices; - Farmers are not aware of the risk of contamination not only to other birds but also to humans; - Proximity of henhouses to houses; - Insufficient awareness of poultry farmers.	- Fear of transmitting avian flu from poultry to humans; - Awareness of the necessity to protect humans and poultry against avian flu; - Fear of losing the entire flock of poultry.
Poor hygienic conditions for handling the poultry and their wastes	- Habit of washing without soap; - Poultry wastes are not considered dangerous, but could be a source of transmission for avian flu; - Poultry who present no signs of illness are not considered dangerous; - Use of bird waste as manure to enrich the fields; - Insufficient awareness of the people about the sources for transmitting avian flu; - Difficulties of providing water from March to May in Tenado because of the drying up of traditional wells.	- Fear of transmitting avian flu from poultry to humans; - Poultry farmers consider the waste as “dirty” and wash their hands or entire bodies after having handled it.

## COMMUNITY-BASED, PARTICIPATORY ACTION RESEARCH ON AVIAN INFLUENZA

Practices	Obstacles to change	Opportunities for change
Handling and consumption of sick or dead poultry	- Cultural habits ; - People think that avian flu no longer exists in their villages ; - A way to minimize losses due to poultry deaths ; - Insufficient financial means to buy meat ; - Not always aware of the risks of infection from handling dead birds ; - Children can eat dead birds unbeknownst to their parents.	- Fear of transmitting avian flu from poultry to humans; - Fear of losing all the poultry and the income they bring to households; - The Muslim religion forbids eating dead poultry.
Consumption of undercooked poultry by children and during sacrifices	- Cultural habits ; - Not enough time taken to fully cook chickens during sacrifices (people are in a hurry to return home) ; - Children do not know when poultry is fully cooked ; - Adults do not always watch what children eat ; - Most people are not aware of the risk of infection linked to eating undercooked poultry ; - Insufficient wood in Gampela to cook food (strict controls on woodcutting)	-Fear of transmitting avian flu from birds to humans; - Existence of energy sources (wood) to cook poultry in Tenado.
Introduction of foreign poultry into the farmyard	- Need to have good breeders to increase flock size ; - Mortality of poultry which forces people to bring in outside birds to restock the flocks ; - Insufficient awareness of poultry farmers to the risks of infection ; - Farmers think that purchased poultry is in good health; - Giving poultry as gifts is very prevalent in the two villages.	- Fear of transmitting avian flu from poultry to humans; - Most farmers are aware that introducing foreign poultry can be an important source of bird flu infection.
Mixing of chickens and guinea fowl in the same henhouse	- Habitual practices for farmers ; - Insufficient financial means to construct several henhouses; - Smaller flocks do not require the construction of several henhouses; - Poultry farmers are not aware of the risks of infection from mixing species; - Hens hatch guinea fowl eggs and the young guinea fowl stay with them until 2-3 months old.	- Poultry farmers separate turkeys and ducks; only guinea fowl are often mixed with hens; - The large farmers (who have large flocks) separate chickens and guinea fowl; - Fear of infection from avian flu; - Fear of losing the entire flock of poultry and the income it can generate.

The lack of perception of risks linked to the various practices constitutes a principal obstacle to changing behavior. This lack of perception of risks is tied to the experiences people have with disease outbreaks linked to poultry.

On the basis of observations made at the two sites, the infection risks that people are unaware of are: handling of sick poultry; handling of poultry meat before cooking; the degree of cooking; contact with poultry wastes.

The work of awareness raising and communication needs to focus on these points.

1.4.3 Conditions and Perspectives on Changing Current Practices

Table 14: Actions proposed by the people to stimulate changes in current practices

Actions	Gampela			Tenado		
	Men	Women	Youth	Men	Women	Youth
Consulting advice on construction of henhouses				X		X
Raising awareness of reporting cases of sick poultry				X		X
Raising awareness of avian flu	X	X	X	X	X	X
Strengthening the skills of village vaccinators					X	X

In order to stimulate change, the poultry farmers proposed three actions:

- Consulting advice on constructing model henhouses in the village which could lead poultry farmers to change their henhouse designs and to switch to raising birds in confined farms, according to the youth and men of Tenado. This latter change assumes that poultry feed is available and that people have the means to buy it. It also means that poultry farmers will need financial support (microcredits) to construct the henhouses. Training is also needed for the farmers so they can run a confined poultry operation.



Chicken house with a small door to prevent theft

- Farmers need their awareness raised on the need for early treatment of poultry through calling the veterinary services at the first sign of illness. The fear of human infection by avian flu could push poultry farmers to make rapid changes in this area. The farmers recognize that the fear of avian flu could be an important factor in changing poultry raising practices:

*“Because of the fear of avian flu infection in humans many people will report suspicious poultry deaths observed in the village” (Men’s group in Tenado).*

Moreover, in Tenado and Gampela, poultry farmers are ready to change their poultry raising practices in the case of an avian flu pandemic with the advice of the appropriate experts.

- **All groups in Tenado and Gampela** wished to see awareness raising campaigns so that the people would be informed on the modes and sources of infection by avian flu and how to avoid risky behaviors.
- **Youth and women** in Tenado proposed strengthening the capacities of the village vaccinators to whom farmers often turn when poultry is sick. Strengthening their capacities would allow them to intervene in providing curative care, which would reduce the pressure on the veterinary officer.

### 1.5 EXISTING COMMUNICATIONS RESOURCES

#### 1.5.1 Actions Undertaken by the Community to Prevent and Contain the Impact of Avian Flu

According to different groups and persons interviewed in Gampela and Tenado, the community has not organized itself to carry out activities to fight against an avian flu outbreak. The slaughters of poultry and control measures are organized by the governing authorities. Communities do not participate in them. At the request of the authorities, community members joined the slaughter teams. Also the authorities called on the village chiefs to raise awareness among poultry farmers who opposed the slaughter of their poultry.

However, it should be noted that nearly all the peoples of Tenado and Gampela stopped eating poultry during the avian flu outbreak, when the inhabitants became aware of the risks of transmitting the virus from birds to humans. Today a large number of inhabitants still no longer eat dead poultry.

Moreover, faced with a lack of chickens for sacrifices, especially for health care offered by traditional healers, many people in Tenado have temporarily replaced chickens with the feathers of living chickens. These feathers are bought in neighboring villages which have not been affected by avian flu. This action was recommended by the traditional healers to minimize the effects of avian flu on traditional religious practices.

#### 1.5.2 Other Actions That Could be Undertaken to Prevent and Contain the Impact of Avian Flu

In order to inform about and curb the impact if avian flu the various groups and individuals surveyed in Tenado and Gampela proposed the following actions:

- Raising the awareness of the people about avian flu;
- Organization of community surveillance;
- Reporting cases of sick poultry.

**Raising awareness:** this activity was sought by all groups and individuals interviewed in Tenado and Gampela. The communities of the two villages are ready to participate in organizing and implementing awareness raising and information campaign on avian flu. These campaigns would have to be organized with outside technical financial and material support. The primary objective of the awareness raising would be to inform the peoples on the modes and sources of infection from avian flu. According to those interviewed, one of the conditions for success in these campaigns is to involve the community leaders, especially the head of the village.

**Organization of community surveillance:** the peoples of Tenado and Gampela are ready to organize community surveillance for avian flu, which is recognized in the village by high poultry mortality and the risks of human infection. The men said that only signs of avian flu in the traditional poultry farms could convince them that they have the disease in their village.

In order to organize the community surveillance, the people proposed setting up surveillance committees made up of representative from each district, chosen by the inhabitants. This committee would work in close collaboration with the *chef de terre*, animal health agent and security forces. The women of Gampela highlighted the need to have women on this surveillance committee.

**Organization of reporting:** the communities of Tenado and Gampela are also ready to organize the reporting of cases of avian flu. This reporting could be done through the surveillance committees, in collaboration with all the poultry farmers of the village. In order for the reporting to succeed, the poultry farmers need to be better informed about the signs of avian flu.

### 1.6 COMMUNICATION SOURCES THAT ARE EFFECTIVE AND HAVE THE TRUST OF THE COMMUNITY

In Gampela, for cases of avian flu, trusted sources of information cited by the various groups and individuals surveyed in Gampela are: the village chief, the delegate, heads of districts, the raagnaabas (town criers), village vaccinators, the veterinarian at the ASUDEC NGO, the prefect from the department of Saaba, municipal counselors (these were cited only by the women's group and youth), leaders of the farmers' groups, the nurse.

These sources of information could constitute two closely linked social networks, which could be used for communications:

- The traditional communications network in the village, in which the primary actors are: the village chief, the district heads, the village administrative leaders (delegates) and the raagnaaba (town crier). The information given out by the village chief is sent to the district chiefs and the "delegate." Each district head is responsible for informing households of his district. At the request of the village chief, the *raagnaaba* can directly inform the people at the market.
- The communications network for poultry which passes from the "delegates," to the village vaccinators and the leaders of women's' groups (uniquely for women) to reach poultry

farmers. This network also includes the veterinarian at the NGO ASUDEC. In order for information to reach the entire village, the communications must take into account the traditional communications network. When communications concern human health, the nurse and the traditional healers must be included.

In Tenado, when avian flu was present, trusted information sources cited by the persons surveyed included: the *chef de terre*, village vaccinators, animal health agents, the nurse at the Health and Social Development Center and traditional healers, the prefect, the delegates, town crier, and district heads.

As in Gampela, two closely linked social networks could be used to communicate in Tenado:

- The traditional communications network in the village, in which the primary actors are: the *chef de terre*, the district leaders, the village administrative leaders (delegates) and the town crier who works under the orders of the *chef de terre*. The information is sent by the village chief to the district heads and the “delegates.” Each district head is responsible for informing the households in his district. At the request of the *chef de terre*, the town crier can inform the people directly in the market.
- The communications network for poultry information passes from the prefect, to the livestock agent, and the delegates to reach the poultry farmers. In order for information to reach the entire village, the communications must take into account the traditional communications network. When the communications also includes human health issues, the nurse should be included. Lastly raising awareness of the people on human health-related subjects should include the traditional healers who are often consulted by the people of Tenado.

The women of Gampela and the youth of Tenado and Gampela think the mayor and the municipal counselors should be included in this communications network. The village leaders can play the same role as the delegates.

### 1.6.1 Community Resources Available to Prevent and Neutralize the Impact of Avian Flu

The communities of Tenado and Gampela have three types of resources to prevent and neutralize the impacts of bird flu: organizational resources, human resources and material resources.

Organizational Resources: in each of these villages the traditional organization is very strong and respected by the people. Awareness campaigns to mobilize the people could be supported by this traditional organization. Also, in the two villages there are grassroots organizations which can easily mobilize their members. In Tenado for example, there are three dynamic women’s associations which bring together the women of the village. In addition to these women’s associations there is also an association of traditional healers which could be used to raise awareness of issues related to the religious role of chickens and how it affects human health. In Gampela there are several groups of poultry farmers supported by the NGO ASUDEC, which works to promote poultry farming in the village.

There are human resources in the two villages that can be used to fight avian flu:

- In Gampela and Tenado, the village chief or the *chef de terre* (in Tenado), the delegates, the municipal counselors, the noted district dignitaries can be used for social mobilization.
- There are village vaccinators in the two villages who have the trust of the people and who can become involved in the awareness and raising and providing of information to the people.
- In Gampela, actors like the NGO ASUDEC have experience working in the village and can contribute to the mobilization of poultry farmers and provide personnel for the awareness campaign.
- In Tenado, the veterinarian could participate in the awareness campaigns. And finally, the involvement of the traditional healers could help in rapidly changing behaviors related to the religious role of chickens. Also the traditional healers will be listened to by the people for all awareness raising activities related to human health.

Material resources are more limited. The village of Tenado has a rather large facility (the local People's Recreation Center) which could hold all the awareness raising and training meetings on avian flu. The people meet in this center on a regular basis and all awareness and outreach meetings take place there.

### 1.6.2 Support Expected from the Government and Donors.

Three types of support are sought from the government and donors: technical support, materiel support and financial support.

The technical support is especially requested for three activities:

- Organizing the community to carry out community surveillance;
- Implementation of an awareness and information campaign on avian flu;
- Construction of model henhouses to demonstrate confined poultry farming in Tenado.

Material support was requested by men and youth in Tenado and men of Gampela. The youth and men of Tenado wished that the members of the community surveillance committee could be given bicycles to better carry out their activities. These groups also hoped that several large poultry farmers could benefit from construction materials (caging, cement) in order to construct modern henhouses to show the feasibility of confined poultry raising approaches to other farmers. The youth of Gampela also hoped that the members of the community surveillance committee could be given bicycles to better facilitate the accomplishment of their activities.

Financial support was requested by all three groups (women, men and youth) in the two villages. This support would be in the form of microcredits for the development of income-generating activities. The activities they cited included: gardening (youth) raising small ruminants (youth and men) and raising pigs (women).

## 2. WIDESPREAD AVIAN FLU SCENARIO

### 2.1 PREPAREDNESS OF COMMUNITY MEMBERS FOR COMMUNITY RESPONSE AND SURVEILLANCE MEASURES

In both Tenado and Gampela, the populations are poorly prepared for community response and surveillance. In the two villages the only preparation the community members had was their own realization of the dangers of avian flu and especially of the risks of transmitting the virus from poultry to humans and the deaths it can cause. The communities are also aware that the avian flu can lead to a loss of all poultry, which could create enormous financial difficulties for households.

The communities have not yet organized themselves to carry out community response and monitoring measures. However, in the event avian flu comes to the villages, they are ready to organize themselves to carry out community monitoring and to contribute to awareness-raising and reporting activities alongside governmental and other actors. The communities also propose to change their methods of raising poultry: to shift from extensive poultry raising to confined poultry farming in order to limit the movements of the poultry and their frequent contact with humans.

As for community monitoring, in Gampela and Tenado the people confirmed that they had already been through situations similar to avian flu and that they had organized themselves to confront it accordingly.

#### Box: 5 Example: Meningitis Epidemic

In Tenado, for example, around 13 years ago the village was faced with a meningitis epidemic and the people organized themselves to protect themselves from the illness. Thus, on the orders of the *chef de terre* and under the supervision of the district heads and heads of households, all public gatherings, especially the markets, were banned, and sick people were put in quarantine in a camp especially constructed by the people for this purpose.

### 2.2 CONDITIONS FOR IMPLEMENTING NEW MEASURES TO CONTROL THE EPIDEMIC

- *Community monitoring:* in order to implement this measure, the communities of Tenado and Gampela need technical assistance to create a community monitoring committee and to train its members on avian flu, including modes and sources of infection. The communities also hope that the members of the monitoring committee could be equipped with bicycles to facilitate their movements to carry out their activities.
- *Raising Awareness:* raising awareness was identified by all the groups interviewed in the two villages as one of the primary activities to be undertaken to fight against an avian flu epidemic. According to the people surveyed, awareness raising must be done by professionals who are familiar with avian flu. The community could help the awareness raising team by mobilizing the population.

- *Reporting*: reporting can be organized by the members of the monitoring committee with the support of the poultry farmers. In order for the reporting to be a success, people interviewed thought it was necessary to sensitize the farmers on the modes and sources of avian flu infection.
- *Confined poultry farming*: this measure was identified by the men and youth of the two villages. In order to implement it, the persons interviewed hoped to benefit from technical financial and/or material assistance. Technical support would consist of help in constructing henhouses adapted for confined poultry farming and to train the farmers in this type of poultry farming. The financial and/or material assistance would consist of providing microcredits or materials to build the henhouses.

### 3. PANDEMIC AVIAN FLU SCENARIO

#### 3.1 ACCEPTABILITY OF NEW MEASURES

**Table 15: Measures proposed to confront an avian flu pandemic**

Measures	Gampela			Tenado		
	Men	Women	Youth	Men	Women	Youth
Ban on raising poultry		X				
Isolation of those sick with avian flu				X		
Ban on public gatherings				X		

- *Ban on raising poultry*: this measure was identified by the women of Gampela who gave priority to safeguarding human lives. However, given the importance of chickens in the religious and sociocultural practices in the two communities, a prohibition on raising poultry would be hard to implement. Thus, in evoking a possible ban on raising of poultry in the village of Gampela, one poultry farmer declared:

*“Chickens were raised by our grandparents and their grand parents; we cannot abandon raising poultry, because the end of raising poultry would signal the end of our society.”* (Man in Gampela).

Women also see the consequences of banning the raising of poultry on the customary life of the village:

*“Ending the raising of poultry would signify our misfortune and that of our village chief.”*

In other words, the village would face misfortune if the religious practices disappeared because there were no more chickens to be sacrificed.

A ban on raising poultry was not proposed to the community of Tenado. As in Gampela and for the same reasons, this ban could be difficult to implement in Tenado the following statements show:

*“If the need is to sell animals for money, it is possible to replace chickens with other types of animal farming, such as goats, sheep and pigs. But among us, it is the women who raise pigs. We would also have meat from these types of animal farms. But the gourounsi cannot live without chickens because of sacrifices: we use lots of chickens to look for traditional medicines (pharmacopoeia).” (Man in Tenado).*

A youth added:

*“If we can no longer raise poultry in Tenado, the people will go to places where poultry raising is possible, because chickens are essential to our customs and we cannot let them go” (Youth in Tenado).*

- *Isolation of those sick with avian flu:* this measure was proposed by the men of Tenado. It involves putting people sick with avian flu into quarantine in order to avoid them infecting others. This measure could be easier to implement in Tenado, which unlike Gampela, has already gone through a similar experience with meningitis.
- *Ban on public gatherings:* this measure was proposed only by the men of Tenado. It involves limiting contact between individuals, and thus the opportunities to transmit avian flu, by banning public gatherings. Even if the men who proposed this measure say otherwise, we think that this measure would be difficult to implement because of the cultural habits of people and the numerous occasions when people get together in Tenado and Gampela, such as the market, funerals, weddings, etc.

### 3.2 FORESEEABLE ALTERNATIVES AND HOW TO COMMUNICATE THEM

- *For a ban on raising poultry:* instead of banning the raising of poultry, it will be easier to get farmers to change the way they raise poultry, abandoning the extensive farming for confined poultry farming. This measure could be announced to poultry farmers by the animal health service technical staff.
- *For isolation of people sick with avian flu:* having lived through a similar situation, the community of Tenado could accept this quarantine measure without much difficulty. The situation would be different in Gampela. In case this approach is rejected, quarantine could be replaced by home-based care, along with sensitization of family members who must limit contacts with the sick person to the greatest extent possible.
- *For a ban on public gatherings:* in both Tenado and Gampela this measure would be very difficult to implement. It would be wiser to sensitize the people by insisting on the risks of infection for avian flu and on the necessity to limit gatherings of people to the greatest extent possible in order to avoid crowded situations.

## C. LESSONS LEARNED FOR THE DEVELOPMENT OF EFFECTIVE COMMUNICATIONS INTERVENTIONS

### 1. USE OF TRADITIONAL STRUCTURES

- The communities of Gampela and Tenado partly justify their opposition to government measures, namely the slaughter of poultry during the avian flu epidemic, by the fact that information relating to the presence of avian flu in the villages and the measures taken were not communicated to the people by the customary authorities, namely the village chief in Gampela and the *chef de terre* in Tenado, who have tremendous prestige in their respective communities. These authorities are well respected persons in their communities and the people consider them as trusted sources of information. By the same logic, the traditional healers play a key role in the area of chicken sacrifices. No real change can take place in this domain without their intervention.
- ***In order to have the support of the people, avian flu communications activities must be carried out in close collaboration with the customary authorities, especially the village chief or the chef de terre and the traditional healers (when it concerns the links between the chicken sacrifices and human health).***

### 2. COMMUNICATION MESSAGES

#### Cooking of poultry meat

In both Tenado and Gampela, the people are not conscious of the risks of infection from avian flu linked to insufficiently cooking poultry meat. The people are conscious of the risks of infection from eating sick or dead poultry. But they do not see the link between the risk of infection and the degree to which poultry has been cooked.

Even though chicken cooked in people's houses is generally well cooked, as the women affirm this is not the case for chickens used in sacrifices, which in most cases are rapidly grilled and eaten in the place where the sacrifice takes place. This practice is not due to any taboo or prohibition which would keep the chicken from being cooked properly, it mainly stems from acquired habits.

***The messages in this domain must focus on the necessity of fully cooking poultry meat, even sacrificial chickens, by putting the emphasis on the action of the heat needed to kill the avian flu virus.***

### Reporting of cases

The poultry farmers of Tenado and Gampela are not sufficiently informed of the consequences of not reporting illnesses and of the importance of reporting cases of sick or dead birds. The low usage of veterinary services should also be noted, due to the relatively high cost of veterinary products, and the habits of poultry farmers to administer medicine themselves by using their own concoctions.

***Thus for reporting of cases, the message should be:***

- The problems of avian flu infection which can come from not reporting suspected cases;
- The effectiveness and accessibility of veterinary products.
  
- The separation of species and the introduction of foreign poultry in the farmyard.

The smaller flocks and insufficient financial resources for constructing adequate henhouses are one of the key obstacles to keeping species separate.

As for introduction of foreign poultry, the primary obstacles are:

- The need to have good breeding stock to increase the size of the flocks;
- Poultry deaths which oblige farmers to bring in outside birds to restock the flocks;
- The giving of chickens as gifts which is widespread in the two villages.

***The messages should speak to the risk of spreading avian flu to all poultry if there is an infection, with all the social and economic consequences linked to the loss of all the poultry.***

### Hygiene for hands, clothing and utensils

The people of Tenado and Gampela do not perceive the risks of infection due to a lack of hygiene when it comes to the body, clothing and cooking utensils. The women and men wash their hands and utensils to take away the odor of the meat and blood. Also, they wash their hands after handling the wastes because these are “dirty and smell bad”. However this washing is not always done with soap.

Moreover, in Tenado, henhouses are cleaned by children and no measures are taken to ensure that they wash themselves and their clothes after cleaning the henhouses, or after plucking and cutting up poultry. These hygienic practices are linked to the habits of the people. The only constraints to changing behaviors are:

- In Tenado, the difficulties of supplying clean water during a portion of the year (March to May) because of seasonal well failures in the village. Most of the people get their water from traditional wells. Unfortunately, these dry up beginning in March.
- The inability of certain households to always have soap on hand, due to financial constraints.

**Messages should emphasize the following points:**

- ***The risk of human infection due to lack of hygiene for the body, clothing and utensils;***
- ***The effect of detergents, especially soap, on the avian flu microbes.***
- ***The vulnerability of children who handle poultry or wild birds and bird wastes. The necessity of parents to make sure their children follow rules of hygiene for their bodies and clothing after cleaning henhouses or preparing poultry for eating.***

### 3. THE MOST EFFICIENT CHANNELS

The first information on avian flu came from the radio which should be the primary channel for the two villages. In fact, the radio is actively listened-to in Tenado and Gampela. In Tenado the people listen to radios broadcasting from Kedougou, a city located 30 kilometers from Tenado. The people of Gampela listen to radio broadcasts from the city of Ouagadougou.

The interpersonal channel (door to door) is also preferred as a way to get cooperation and changes to behavior. In fact, it allows one to get closer to the households, and to better respond to their questions and to bring them messages that are tailored to them.

## D. CONCLUSIONS

During the first half of 2006, the villages of Gampela and Tenado were hit by avian flu. The general populations and especially the poultry farmers were strongly affected by the consequences of this disease.

The communities of Tenado and Gampela are above all concerned about the risk of transmission of the avian flu virus from birds to humans, and by the economic consequences to households of losing all their birds. The people are aware that humans who become infected with avian flu can die from it. The communities are also concerned by the negative impact of avian flu on traditional religious practices due to the central role played by chickens in them. The people of Tenado are especially sensitive to this aspect.

However, the populations have little knowledge of the modes and sources of avian flu infection, or the factors which can favor its spread. This lack of knowledge partly explains the persistence of a number of risky behaviors and practices.

In the fight against avian flu, numerous obstacles make it difficult to make changes to behaviors and practices. Among the obstacles we can cite for example the traditional practices of raising poultry. Fortunately these obstacles are diminished by facilitating factors such as, for example, the fear of transmission of avian flu from poultry to humans.

Moreover, the communities have very few resources to combat avian flu. They expect much from outside interventions. They have not taken any action to prepare for or to mitigate the impacts of avian flu in their villages and are poorly prepared to undertake community response and surveillance measures.

Communications activities will be indispensable for causing people to change their behavior and practices in order to combat avian flu. These actions must be carried out in close collaboration with customary authorities who enjoy a high degree of prestige in their communities and who have the trust of the people.

## E. RECOMMENDATIONS

### 1. PEOPLE'S LEVEL OF KNOWLEDGE ABOUT AVIAN FLU

Activities to raise awareness and provide information need to be rapidly put in place to raise the level of knowledge about avian flu among the people. From this knowledge will then flow changes in risky practices and behaviors. This awareness raising must address the risks of infection that are not perceived by the people, including:

- Not separating poultry species;
- Transporting of poultry;
- Not washing the body, especially the hands, after:
  - Coming in contact with poultry waste;
  - Handling raw poultry meat;
  - Handling sick poultry;
- Not reporting suspected cases of sick poultry;
- Insufficiently cooking poultry.



Transporting poultry on a motorbike

## 2. CREDIBLE SOURCES OF INFORMATION

In order to have greater chances of success, communication at the two sites must rely on two closely linked communications networks:

- The traditional communications network, in which the key actors are the head of the village in Gampela, the *chef de terre* in Gampela, the district heads, the delegate, the town crier and the people.
- The poultry-related communications network, in which the key players are the local government authorities (prefect and delegate), technical staff of the livestock service (veterinarian and village vaccinators) and poultry farmers.

## 3. COMMUNICATIONS CHANNELS AND MESSAGES TO DELIVER

Table 16 Practices and behaviors

Risky Practices and Behaviors	Target groups	Channels to use	Messages	Comments
Rapid and insufficient cooking of raw poultry meat for sacrifices	Traditional healers Chef de terre	CIP by veterinary officers	Take time to fully cook chicken meat even for sacrifices	
Not separating species	Poultry farmers and vendors	Video and door-to-door Radio	Separate different species	
Unprotected contact with excreta	Children Men	Video and door-to-door Radio	Make sure to wash the body and especially hands with soap	
Handling of sick birds	Children Men	Video and door-to-door Theatre Forum Radio	Make sure to wash hands with soap after handling birds	
Handling of raw poultry meat before cooking	Women Young boys and girls Men	Video and door-to-door Theatre Forum Radio	Make sure to wash hands and cooking utensils with soap after handling meat	
Lack of reporting suspected cases of sick poultry	Poultry farmers	CIP by veterinary officers Radio	Report suspected cases to local animal health authorities	

## ANNEX: ACTION PLAN

Actions to be taken	By Whom?	Resources available or to be sought	Constraints	Solutions
Develop pig farming	- Farmers, - Animal health service technical staff	- Financial Resources. - Human Resources.	Farmers have insufficient financial resources	Look for financial partners to provide microcredits to farmers
Professional training for youth	- Youth – Trainers	- Training Facilities; - Financial Resources. – Human Resources.	- Lack of training facilities ; - Youth to be formed have insufficient financial means ; - High illiteracy rate among youth	- Look for training centers that address youth issues; - Look for partners to sponsor training for the youth.
Develop sheep and goat farming	- Farmers, - Animal health service technical staff	- Financial Resources. – Human Resources.	Farmers have insufficient financial resources	Look for financial partners to provide microcredits to farmers.
Consulting support for construction of henhouses	- Farmers, - Animal health service technical staff; - Masons	- Financial Resources. – Human Resources ; - Material Resources	Farmers have insufficient financial resources	Look for financial partners to provide microcredits to farmers.
Raising awareness of avian flu	- General Populace – Animal health service technical staff	- Awareness Raising Materials ; - facilitators	Lack of awareness raising materials in the village	Look for awareness raising materials and facilitators.
Capacity building for village vaccinators	- Vaccinators, - Trainers.	- Training Room; - Financial Resources.	-	-
Organization of community surveillance	- General populace – Administrative authorities ; - Animal health Service technical staff	- Transportation (bicycle); - Trainer (training for surveillance committee)	Lack of a means of transportation	Look for partners to fund means of transportation for the surveillance committee
Organization of reporting of cases	- Farmers ; - Surveillance committee – Animal health technical service	- Transportation (bicycle)	- Lack of a means of transportation ; - Poor knowledge about avian flu among farmers	- Look for partners to fund means of transportation for the surveillance committee; - Raise the awareness of farmers to avian flu signs, symptoms and modes of transmission.