**Highly Pathogenic Avian Influenza Preparedness and Prevention in Timor Leste**

Virulent Avian Influenza, previously known as fowl plague, a term which included Newcastle disease, is a highly contagious disease of domestic fowl and has been recognised since 1878. The virus is closely associated with water fowl which are not usually affected by the disease and serve as the entry point of infection for domestic poultry. Many of the strains that circulate in wild birds are either non-pathogenic or of low pathogenicity to poultry. However virulent strains may emerge either by genetic mutation or by reassortment of less virulent strains. The number of recorded outbreaks of highly pathogenic avian influenza (HPAI) worldwide has increased over the past 10 years, culminating in early 2004 with unprecedented and almost simultaneous outbreaks of the virulent H5N1 strain of HPAI involving at least ten countries in East and South East Asia. The most affected countries were Vietnam, Cambodia, Lao People’s Democratic Republic, Thailand and Indonesia. By 2006, outbreaks of HPAI (H5N1) in poultry and wild birds had been reported in Russia, Kazakhstan, western China, Mongolia and several sites in western Eurasia (most notably Ukraine, Romania and Turkey) with Nigeria becoming the first country in Africa to report an outbreak of HPAI (H5N1) commercial flocks. While Timor-Leste is still free from HPAI, it shares a land border with Indonesia where the disease is endemic in 25 of the 33 provinces (December 2005). Timor-Leste has established a National Task Force for Avian Influenza. The Task Force, which has representation from a number of government ministries and international organisations is currently drafting a Preparedness and Response Plan for Highly Pathogenic Avian Influenza. The Minister for Agriculture, Forestry and Fisheries issued a ban on the importation of poultry and unprocessed poultry products from infected countries in January 2004. The Department of Livestock has a well-advanced draft of the National Contingency Plan for HPAI in Animals. A HPAI prevention and control program is being drafted which will support the development and implementation of a national avian influenza strategy that will address issues of:

- Preparedness;
- Prevention;
- Response;
- Legislation and enforcement; and
- Research and development.

The program will support the preparation of education and extension materials dealing with the basic concepts of the germ theory of disease, animal sanitation and husbandry and food safety. These will be disseminated and discussed with all key target groups in addition to information on HPAI. An understanding that HPAI is caused by a contagious pathological agent is fundamental to ensuring high levels of community compliance with prevention and control activities. Target groups for the awareness raising campaign will include senior ministry decision-makers, local government officials, District Livestock Officers, Village Livestock Workers, poultry and pig farmers, poultry traders, NGO staff, primary school teachers and students, health staff, traditional healers, journalists and religious groups. The program will also increase contact between Livestock Department personnel and households that raise only small stock.
Highly Pathogenic Avian Influenza Preparedness and Prevention in Timor Leste - continued

The program will tackle the prevention and control of HPAI by ensuring that all key stakeholders have a good understanding of the problem at hand and a common approach to the implementation of key activities. The aim is to prevent and, if necessary, control HPAI in animals in Timor-Leste as this is the most effective means of protecting human welfare (both in terms of preventing infection and economic losses) by controlling the precursor virus in its avian hosts, thus pre-empting appearance of a pandemic strain. In addition, by improving general understanding of disease processes, disease control and food safety, the general wellbeing of the population will be improved.

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A short visit to “Chook Island”, Solomon Islands - November 2005

This short week-long visit to St Cruz was like paradise for a self confessed chookaholic like me. Every village I passed through had several chickens wandering about with at least one hen in each village with between 5 and 10 newly hatched chickens also wandering freely.

I have wanted to visit St Cruz since 1990 when I first heard about the wild jungle fowl or chicken there. It is believed that these wild fowl are Red jungle Fowl, the original chicken, and my research over the past 15 years has uncovered lots of interesting information about these special fowl.

Local oral history attributes the arrival of the chicken (and pig) in St Cruz to the “discovery” of the Solomon Islands by Alvaro Mendana in 1595 however records kept by one of Mendana’s crew states that chickens and pigs were already present when they arrived. These wild chickens are referred to as St Cruz or Mendana fowl across the Solomons. Many of the village chickens in the Solomons are crossed with the jungle fowl; no doubt a reason for their survival without much attention in the villages.

Chickens are well known to the Pacific people as I believe they travelled with them from Asia thousands of years ago during the human migrations. However in the past the village chooks have been left to wander around the villages and nearby bush without any organised feeding or housing much so therefore very little returns to the people.

Breeding is random and risky, young chickens die from starvation or predators and eggs may be difficult to find or a meat chicken difficult to catch.

Several villages also had wild-caught roosters in varying degrees of tameness and one house had two wild-caught hens which had their own batches of village bred baby chicks. In one village a pure white wild caught rooster was wandering with two village hens, which of course confuses my theory of these wild jungle fowl actually being a pure bloodline.

My hosts had two wild-caught chicks about one week old which they were keeping in a coconut husk for warmth! I arranged for a small cage to be made from some mesh I had delivered previously so that the two chicks could be kept from predators but still allowed access to outside greenfood and scratching. During my week there they tamed right down because of hand feeding and feather developed in a sex-linked way so that they could easily be identified as a male and female.

A later “bushwalk” through the village gardens up on the plateau about half an hour above the villages brought us into contact with the wild mother and remaining sibling of the two chicks again.

The local people all have a real affinity with chickens because of their traditions of hunting and either eating or keeping the wild fowl.

It is a common pastime for the local people to trap the wild chickens. Usually roosters are caught because a semi domesticated male is tethered as bait to call a wild male and as the rooster is challenged it becomes entangled in a net. Hens and chicks usually need to be caught by running them down in cleared areas of the jungle.

The recently caught wild roosters appeared bedraggled and cowering, however one male which had been held for five months was a picture of health and would give any game bantam in an Australian exhibition a run for its money.

I did not sight even one sickly looking fowl in the villages which reminded me to give extra consideration to teaching about health and hygiene for any captive breeding projects.

The avairy which was constructed through my own previous email efforts for captive breeding of wild kokorako is well sited and built. As the wild fowl seem plentiful it has been decided to postpone the establishment of a captive breeding program of them and the building used to support the proposed collection and dispatch of surplus kokorako to Honiara.

The proposed office and accommodation building is half completed and arrangements were made for the finishing of walls and windows as well as toilet, washing facilities and kitchen. It comprises two bedrooms, an office and meeting room with verandahs back and front. As it is a large well built building there is a provision for further rooms upstairs. It is well sited on the main road through the bayside villages at Nep Village.

The building has been given the name of “Eikio Haos” as it brings the hatching of new ideas for the community. Eikio is local language for baby chickens.

I was privileged to be the first person to use the new building for my Kai Kokorako Perma-Poultry workshop there with seven students. I was further honoured by a village ceremony which acknowledged my work and assistance so far for the school and community and bestowed the official local name of “Mekio” (a person interested in wild male chickens) upon me.

1. In Australia, chickens are known as chooks. 2. The local name for chickens.
A short visit to “Chook Island”, Solomon Islands - November 2005 - Continued

Shipping of the chickens to Honiara will be the most costly and difficult part of the planned purchasing exercises because of shipping and the remoteness of St Cruz. Arrangements are already in place, with family members of the kokorako group also being a sailor on the ships and another, a resident of Honiara who is capable of collecting from each ship and delivering to buyers.

A useful and interesting observation was made of a rice polishing plant near the main wharf at Lata. A big mound of discarded husks is already at the polishing site so arrangements are being made to obtain it for litter for chicken houses. The locally grown rice will also be a cost effective feed supplement for chicken projects in our area.

As my host was Lionel Vaonelva, the Principal of Kati Primary School, and main supporter for my work on St Cruz, I also spent time inspecting the school site where I had already provided education materials and library books. Additional work was done encouraging participation by the students in all aspects of the chicken keeping. The school is well situated with the PFNet Email office being located next door and land set aside for the proposed Distance Learning Centre. Our new building at Nep is only 15mins walk from the School.

I have started work with PFNet to adapt my Village Chicken Training Manual as a pilot for their new Distance Learning Centre.

It became really obvious during my stay on St Cruz that it should also be the location of my proposed Pilot Breeding Station/Training Centre because it is the home of the original wild jungle fowl, the people have a real affinity for chickens and the presence of support facilities such as existing buildings and land access, Kati Primary School, PFNet and proposed Distance Learning Centre.

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ASVIMO, Dondo District, Sofala Province

Great progress has been made in Dondo. Seventy families have now received 4 birds (one rooster and three hens) and in most cases the results have been excellent. As mentioned in the previous update, some of the child-headed households were experiencing some difficulties managing their new birds. Since June, ASVIMO and the local Government Agriculture Office have conducted four training sessions in different locations to discuss poultry husbandry. Women from each location who had reputations as good village chicken farmers also assisted with the training and are now acting as mentors to the children in their areas. A second Newcastle disease (ND) vaccination campaign was also conducted in July and all involved are very happy with the results. Restocking activities slowed down during the last few months because it was the season when outbreaks of ND are more common, making the purchase and movement of birds just too risky.

In a couple of cases, the child-headed households who received birds were unable to put future benefits ahead of their empty stomachs and so all four birds were eaten. Oh well, at least they had a few good meals!!

Lourenco Jose Jorge is the head of his family and has five brothers to care for. They received four birds in June and now have a total of 13 chickens. One hen has gone broody for a second time and is sitting on ten eggs. In addition to the chickens, the family now has two ducks and a pup called 'Dog'. Jorge, the youngest brother, seems to be Dog's good friend but all the brothers seem to enjoy having him as the seventh member of the family.
Kubatsirana, Sussundenga District, Manica Province

Restocking did not go ahead as planned in Sussundenga as there was an outbreak of Newcastle disease in the region. The outbreak now appears to have finished and so, all being well, restocking will get under way in the second half of January. The price of chickens is just too high in December to consider purchasing them at this time.

The good news is that almost all the chickens in Sussundenga Village vaccinated by the community vaccinators survived the outbreak. In addition to conducting a ND vaccination campaign in July, the community vaccinators (i.e. the Kubatsirana volunteers) have been conducting meetings in the local hospital, school and market to raise awareness about low-cost poultry husbandry techniques and the benefits of consuming chickens and eggs. Farmers often keep their birds for sale rather than home consumption not only because they need the cash from the sale, but also because they don't understand the crucial role of protein in the diet of children and pregnant women. The work with health centres and schools is being funded by the Food and Agriculture Organisation of the United Nations.

Sra (Mrs) Celestina Zimbabwe, a widow, received one rooster and three hens in June. As of 14 November, she has 21 birds and one hen is currently sitting on 12 eggs. Needless to say, Celestina is delighted with the results and so are her children. Celestina also helped with the training sessions for child-headed households and continues to provide advice to four households in her local area.

Having a few extra chickens in the lead up to Christmas will be of great benefit to the families. Not only will they be able to have a good meal on Christmas day, they will be able to sell a couple of birds for a very good price. The sale price of village chickens often doubles or even trebles during the festive season.

Paulina Agosto is 11 years old and the head of her family is her 21 year old sister. They are a family of four girls. They received four birds in June and now have a total of 14 birds. One of their hens is now hatching its second clutch of eggs.

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E-mail: m-francew@kyeemafoundation.org

or

Visit our website:
http://www.kyeemafoundation.org/membership.php
If you give a woman a fish, she will eat for a day. If you teach a woman to fish, she will eat for a lifetime. This parable couldn’t be more true, especially in Vila Ulongue, Tete Province, Mozambique.

Women play a vitally important role in the development of this country and their families. However, not only are many of the women in rural Mozambique uneducated, malnourished and single mothers, they are some of the hardest working people in the world. Caring for their families means getting up early every morning, preparing meals throughout the day, carrying water, washing clothes, cleaning the house, growing the crops needed for food and raising the children. With these daily tasks it is no wonder that many of these young mothers have no time for education. They are busy keeping their families afloat.

Along with all of those daily challenges, Mozambique has some of the highest rates of Malaria and AIDS in the world. There are various causes for these diseases but the most prevalent ones are due to poor nutrition, lack of education, risky sexual habits and a lack of medical assistance. Women are particularly at risk because of the role women play in the Mozambican society. They are often not treated as equal citizens and are unaware of legislation supporting their rights. Their husbands and fathers have a strong influence and control over them. The result is that women often fall into the trap of having sex to earn money or security.

However, the real challenge of combating these feelings is figuring out ways to empower women to make a difference in their lives. This issue of empowerment can take many forms. Education, stable families, good nutrition and a steady income are just a few ways women can achieve the independence they need to overcome the pressures causing them to suffer. These factors are the reason we have developed this project in Vila Ulongue, Tete Province, Mozambique. Our main goal is to help women set and achieve goals to improve their lives and the lives of their families without loosing their self-worth.

Secondly, we are educating women on some of the basic facts of nutrition, gardening, making fertilizers, HIV / AIDS, Portuguese and business tactics. Here is a brief outline of our project:

- We have constructed a house for a woman, who will manage the project, and her family to live in.
- The project provides three machines for the local women to use (two maize grinders and one maize de-huller) located in the classroom we built. It is free for women to use the machines.
- During the lessons we are designing model gardens for the women to observe both how to grow a variety of vegetables and how to use composting and natural fertilizers to enhance their crop.
- IMAP students who are training to be teachers in local schools, are involved in the planning and implementing of the daily lessons. They work together with local teachers to make and use teaching materials to enhance their lessons.
- Throughout the hens’ growth we are offering daily lessons on how to raise chickens, how to use their manure as fertilizers for gardens, and the nutritional benefits of eating the eggs. We also teach the women a bit of basic Portuguese. These training sessions occur seven times a week and also involve brief informational sessions on HIV/AIDS. All of these sessions range in topic from how to avoid and prevent the spread of diseases for both people and chickens, to what the women can do if they contract diseases. Prevention is the best method for both the health of people and the health of chickens. Pro-active solutions are especially important as the women may be breast feeding infants while being HIV positive. Studies have shown that the nutrition of the mother and the feeding habits of the infant can affect the possibility of the infant contracting HIV from the mother. The health of the chickens is similar. In rural villages, it can be difficult to acquire vaccines for the chickens and so the project is putting the women in touch with the District Agriculture Office to facilitate access to thermostolerant Newcastle disease vaccine. We are teaching women techniques for containing their chickens to specific areas, providing safe, clean environments for the birds to live in, and informing them about how to make nutritious diets for their flocks by using locally available resources.
- After the women have attended 12 lessons, they will receive a chicken for free. It is our hope that the women, after learning about the various benefits of raising chickens, will return home to raise more chickens, eat or sell the eggs, use the manure to make fertilizers for their gardens, grow a larger variety of crops in those gardens, improve the nutrition and health of their families and gain economically from that single bird.
**Galinhas para mulheres em Moçambique**  
(Chickens for women in Mozambique) -  
*Continued*

The construction and organization of *Galinhas Para Mulheres* began in January, 2005. In November, 2005, lessons began and have been going since then. Various resources have helped to develop this project, such as: the local government, the Ministry of Agriculture in Mozambique, the US Embassy in Maputo, local businesses, the US Peace Corps, Doctors Without Borders, and private donations from people in the US, Belgium, Germany and Mozambique.

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A new maize grinder will save time and reduce women’s work load considerably.

**IMAP Student installing chicken houses**

**Aran and his team in the Castaway kitchen.**  
Castaways Bar and Restaurant  
Dili, Timor-Leste, January 2006

**Castaway Kampong\(^1\) Chicken Curry**

**Ingredients**

- 1 kampong chicken, cut into joints
- 1 onion, sliced
- 1 dessertspoon ginger, finely chopped
- 1 dessertspoon garlic, finely chopped
- 6 cloves
- 1 teaspoon shrimp paste or belacan
- 1 dessertspoon tamarind paste
- 1 dessertspoon curry paste or powder
- 1 tablespoon palm sugar
- 1 tablespoons oil
- 250 mL coconut cream
- 150 mL coconut milk

**Method**

- Brown chicken in half the oil then remove.
- Add remaining oil, onion, ginger and garlic and cook for 1 minute.
- Add shrimp paste, curry paste, tamarind and cloves and cook for a further 1 minute to release flavours.
- Add chicken and coat in mix then add coconut cream, milk and sugar.
- Cook until tender.
- More milk may be added to compensate for evaporation.
- Season with salt and pepper.
- Serve on rice and garnish with red and green chillies.

**Recipe by Aran Coard**

1. Kampong is the local word for ‘village.’
Poultry Production in Timor-Leste

Timor-Leste has a population of approximately 950,000 people, of whom 300,000 live in the capital city of Dili. Everywhere, even in the suburbs of Dili, poultry keeping is an integral part of life. People and free-ranging poultry live in very close proximity to each other and children treat chickens as pets, handling them frequently, as men treat fighting cocks. The poultry raised includes chickens, Muscovy and other ducks, and pigeons. Poultry are kept for consumption, traditional ceremonies and as fighting cocks. Cockatoos and other parrots are kept as pets.

Poultry husbandry is limited to Sector 4 of the FAO classification (i.e. back yard or village poultry keepers) except for several small layer enterprises of approximately 1,000 to 10,000 hens. Frozen poultry meat is imported (from Brazil, Singapore and the USA) and eggs are imported from Malaysia and are sold through supermarkets and local markets (essentially those close to Dili) at a cheaper price than village chickens and their eggs, although the latter are preferred on the grounds of taste. Virtually all households in villages keep two to five chickens for food (pigeons, muscovy and other ducks are kept but far less frequently) and approximately 10-15% rear fighting cocks. Fighting cocks are raised by men with other poultry being raised, in general, by women with assistance from the children of the household.

Overnight housing is rarely provided for birds in rural areas and most roost in trees around the owner’s house. Poultry are rarely consumed to meet normal household needs for food. It is common for epizootic diseases (presumably Newcastle disease (ND)1 primarily but probably also other contagious poultry diseases) to kill virtually all birds in a village. After epizootics, households repopulate their stocks as funds become available by buying from relatives, neighbours or local markets.

Other farm livestock include, in order of frequency, swine (free-ranging or restricted where there are household gardens), goats (free-range and tethered), hair sheep, Bali cattle (free-ranging and tethered) and swamp buffaloes, used for ploughing. Deer are occasionally raised as pets.

1 The clinical signs of virulent ND and HPAI are very similar and a definitive diagnosis can only be made in the laboratory. A comprehensive awareness campaign will be required to inform farmers of the existence of a new disease (i.e. HPAI) that looks similar to ND but is capable of causing illness and even death in humans. ND can cause conjunctivitis in people but rarely causes any serious problems in people.

Vaccinating birds in Alas Tehen village against Newcastle disease.

Fishing provides a staple food and hunting of wild animals (including wild birds) is intensively pursued in some areas.

Formal education levels vary, with levels generally considerably lower in remote rural areas. As a consequence, general knowledge of good hygiene and food safety is poor. Many farmers continue to practice agriculture and livestock raising in a manner similar to that of their parents and grand parents. Farmers are frequently unfamiliar with the ‘germ theory of disease’; some believe that unhappy spirits are responsible for disease outbreaks in their animals while other farmers have little idea what causes disease.

For example, during a meeting in Alas Tehen village, Fatumea District, the elders of the village explained that prior to the arrival of the Indonesians, the area had been covered by a sacred teak forest. During the years of Indonesian rule, the forest had been cut down and the villagers moved from scattered homesteads to a central village where houses were very close to each other.

The loss of the sacred forest made the spirits who dwell in the forest angry and so they brought increased illness to all types of livestock. The elders welcomed the discussion and extension messages presented by staff from the Livestock Department.

The villagers were keen to discuss the health of their birds and to know if the new disease (i.e. Highly Pathogenic Avian Influenza [HPAI]) had arrived in their village.
Poultry Production in Timor-Leste – Continued

Villagers presented two sick birds for examination and, fortunately, the clinical profile of the birds did not match HPAI or ND. Healthy birds were presented by the farmers for vaccination against ND using the ND-V4HR® vaccine administered via eye-drop. The need to vaccinate against ND at least every four months was discussed and a date set for the next vaccination campaign in May 2006. The ND vaccine is imported by the World Bank-managed Agricultural Rehabilitation Project III and distributed to farmers via District Livestock Officers.

Village poultry are an important component of rural livelihood strategies. As has occurred elsewhere in Asia, Africa and Latin America, the implementation of effective village poultry production programs in Timor-Leste will contribute to increased poultry numbers, increased household purchasing power, increased home consumption of poultry products and increased decision-making power for their owners.

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Acknowledgements: Support provided by USAID through FAO to field the consultancy mission by the first author is much appreciated.

23rd World’s Poultry Congress

The organising committee has great pleasure in extending a warm invitation to everyone with interests in the poultry and allied industries to attend the 23rd World’s Poultry Congress which will be held in Queensland, Australia from 29 June - 4 July 2008.

Please note that our Congress dates have changed from August to June/July.

Given the nature of the many events happening that year, we have amended the dates to allow as many delegates as possible the opportunity to attend. June/July are wonderful months to visit sub-tropical Brisbane. It will be mild and is normally bright and sunny, with day time temperatures ranging from 12- 24°C.

Located in the heart of Brisbane, the venue for this major international event is the modern and beautifully appointed Brisbane Convention & Exhibition Centre.

The scientific and technical program will be topical and relevant to the needs of the poultry industries in 2008. Speakers with expertise in identified areas of interest and importance to industry, science and technology will be invited to share their knowledge with delegates in both plenary and symposia sessions.

Contributed papers will be critical to the success of the meeting and the organising committee is keen to receive submissions across a wide spectrum of activity relevant to the future development of poultry science and the poultry industries.


We look forward to welcoming you “down under” in 2008.
Bob Pym
CHAIRMAN WPC2008

KEY DATES:

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For more information, please visit WPC2008 Website: www.wpc2008.com
Considerations for organised control of Highly Pathogenic Influenza (HPAI) -

Avian Influenza, and more specifically the H5N1 type we are facing these last few years, is about one of the worst hazards that ever could happen to any poultry producer: big or small and even to backyard and hobby poultry farmers. Influenza viruses of any kind and property may show up suddenly without any previous warning and can be detrimental to both humans and animals. Influenza viruses are in a continuous process of changing and adapting their internal and external properties: evolving, adapting and re-assorting. These processes are taking place in many different animal species and humans, and in all kinds of situations and conditions at the same time. The main worry now is about a possible human pandemic causing high numbers of human casualties. This event till now cannot be predicted, however we learn more and more about the processes involved by several new molecular techniques in laboratories. Chances for such a pandemic may be higher in situations where HPAI is not controlled and especially in situations with high concentrations of people and animals together, especially in cases where basic biosecurity measures are denied.

The name ‘Avian Influenza’ suggests this virus originates from poultry, which is not necessarily the case. In fact it is a misleading name. Poultry may be more susceptible to some specific types (mainly H5 and H7 and some others). But many animal species, mammals (also humans) and avian species, wild and domesticated, can be involved. Some animal species are highly sensitive to a specific virus type, others may be less sensitive (e.g. ducks), but may play an important role in spreading these viruses. The above reasons may explain why HPAI is so difficult to control.

In case an outbreak of a contagious disease occurs, the experiences from many different countries have taught us that a thoroughly planned and prepared set of measures offers the best chance of controlling such an outbreak in the shortest time and in a safe way for animals, people and the environment. This not only works for HPAI, but also for other contagious diseases in animals. Generally the government of a country is in control of such plans, that are usually referred to as contingency plans. The best chance for such a plan is when it is prepared and kept up to date in advance. And it is also important that all equipment and people needed are readily available.

Well organised plans must define a strong chain of command and must be provided with the best possible information available to make efficient and specific decisions on what, where and how the actions must be taken.

The organisation within such a contingency plan may best be compared to a fire fighting plan. In case of an outbreak of a sudden dangerous fire in a specific situation, it can only be controlled by the solid determination of well-trained and equipped people. Contingency plans are not yet available in all countries involved with HPAI.

These countries now are supported by the international organisations (WHO, FAO, OIE, UNDP etc) to develop and implement such plans.

Dr. Peter van Beek, DVM, Registered Specialist in Poultry Health, The Netherlands

Avian Influenza Information

Up to date information on avian influenza may be accessed via the internet at a number of websites including:

- The OIE [www.oie.int/eng/en_index.htm](http://www.oie.int/eng/en_index.htm)


A paper presented by Dr Paul Gilchrist that focuses on the control of avian influenza in the family sector at the International Conference on “Opportunities for Village Chickens to assist with Poverty Alleviation, with special emphasis on the sustainable control of Newcastle Disease,” 5-7 October 2005, is available for download from our website: [http://www.kyeemafoundation.org/](http://www.kyeemafoundation.org/)

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