

# Scavenging for protein and micronutrients: village poultry in Timor-Leste

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**ABSTRACT:** Food loss and waste in Timor-Leste has been identified as a critical factor contributing to human undernutrition. Our project enhances natural scavenging systems by improved poultry production, with improved management, vaccination against Newcastle Disease (ND) and logistical support. We are working with the University of Sydney to implement the sustainable use of heat tolerant ND vaccine, administered as eye drops triennially by trained

paraveterinarians. The Australian Department of Agriculture and Water Resources conceived and jointly manages the project with the Timor-Leste Ministry of Agriculture and Fisheries. They provide training in national biosecurity and biosecurity practices applicable to village poultry. Management systems are supported with locally made shelter to protect from predation. With the help of Berrimah Veterinary Laboratory we are improving cold chain management and vaccine potency verification. The project is funded by the Australia Department of Foreign Affairs and Trade. Increased poultry production with these improved systems leads to improved scavenging systems – more hens equals more effective searching for scraps, insects and other invertebrates as they fend for themselves with minimal carbohydrate input provided by their owners. In return more hens are available to produce eggs for sale or chickens for consumption. Each of these activities results in better availability of balanced protein and bioavailable micronutrients for growing and lactating humans. Once households observe that their flock dynamics are no longer subject to dramatic decreases, the consumption of eggs becomes an option rather than prioritising them for hatching to obtain replacement birds.

*Keywords:* village poultry, vaccine, protein, nutrition, women and girls

In Timor-Leste, according to the 2015 census, our human population is 1,167,242. We have a tropical climate with a wet and a dry season. There is stunting in 50% of children under five years, due to lack of nutrition and micronutrients and the energy deficiency of food for children and pregnant women. People have poor dietary diversity, with low intake of animal-sourced foods because those are expensive, especially local chickens. That is why we are trying to improve animal production, through local chickens, to feed our community and especially community farmers in the rural area.

This presentation relates to my job as the Program Coordinator for Village Poultry Health and Biosecurity. My Directorate runs the animal health services for the whole country, especially focusing on places where there are many animals and people raising animals. Expansion is bringing the animal health service closer to the community, to give them better access to it. We run

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This is an edited transcript of the presentation, with some of the powerpoint slides shown.

Details	Numbers	Percentage (%)
Total Households (HH)	184.000	-
HH with Crops	160.000	86 %
HH with no Crops	20.000	10 %
HH with Livestock	178.000	97 %
HH with Chickens	146.000	79 %
HH with Pigs	177.000	96 %

Details	Numbers
No of Chicken	929.000
No of Chicken/HH	6.35
No of Pigs	420.000
No of Pigs/HH	2.5

Figure 1. Agricultural population data for Timor-Leste.

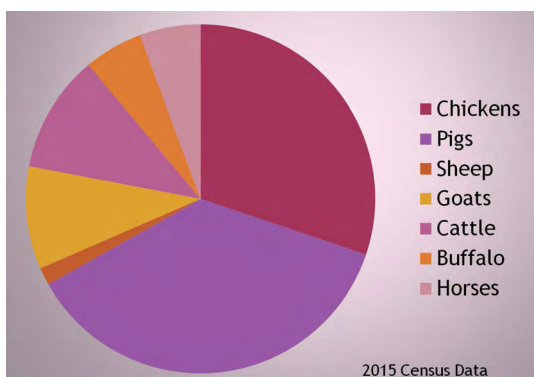


Figure 2. Livestock ownership by 178,363 agricultural households.

vaccination programs for cattle, buffalo, pigs and chickens. The agricultural population figures (Figure 1) show that of the total 184,000 households, 160,000 grow crops (86%) compared to households with no crops (20,000; 10%). However, almost all households (97%) have livestock, and 96% of those households raise pigs and 79% raise chickens.

Most households have both chickens and pigs and the farmers raise more than one type of animal (Figure 2). Households with livestock also keep sheep, goats, cattle, buffalo and horses, as well as the 420,000 pigs (2–3 pigs per household). Each household with chickens has up to six birds, totalling 929,000 chickens.

However, we are losing village poultry because of high animal mortality. The main problems in raising local chickens are:

- Newcastle Disease which is endemic, and when there is an outbreak it kills all the local chickens;



Figure 3. We are vaccinating the chickens against Newcastle Disease in three pilot villages.

- predation, because local chickens find their own food by scavenging in the forest in the day time, and are taken by wild animals, feral cats, dogs, snakes, eagles and humans; and
- under-nutrition in the chicks.

With this particular project – Village Poultry Health and Biosecurity – we are trying to increase the consumption of chickens, as a source of animal protein for the children. Currently, people only eat chicken meat during periods of high chicken mortality from an outbreak of disease.

The project, founded by the Australian Government Partnerships for Development, aims to:

- improve production of local chickens in three pilot villages, and
- strengthen biosecurity arrangements in Timor-Leste.

One village is in the western part of the country, one is in the centre, and one is in the east. We are trying to engage the community to be involved in the vaccination programs to improve the local chickens so they can be used to feed their children and the pregnant women.

In reality, at the moment, when communities produce extra chickens, extra eggs, they prefer not to eat them but to sell them and buy something else, such as frozen chicken from Brazil, or sausages or fish. However, having bought these from the supermarket, they travel home without using ice or anything to keep them cool. There is no refrigeration in the districts anyway to keep the food fresh, so the extra production is actually creating problems in the country.

The Village Poultry Health and Biosecurity project has three main components:

- village poultry health and management, including disease investigation;
- an effective cold chain for the poultry vaccine, so as to keep the vaccine cold until it is dropped into the eye of a chicken, and for this we are collaborating with the Department of Agriculture and Berrimah Veterinary Laboratory; and

- strengthening poultry biosecurity, through better quarantine, for which we are working with Australian quarantine authorities to see how to set up import conditions into Timor-Leste.

### **Achievements so far**

The project started in March 2014. We launched our first vaccination campaign in the three pilot villages in November 2014 and so far have run five campaigns including the one in March 2016 (Table 1). Up to one-third of households in the villages have been involved so far, and the number of chickens vaccinated per household has increased over the 18 months.

The project so far has produced a number of highlights. By improving the health of village poultry, there is:

- decreased loss of chickens and eggs,
- an increased amount of chicken products available for consumption or sale, and
- improved standards of living for communities.

In Timor-Leste, livestock have a critical and complex role in food security because, as you have seen, almost every household has animals. Even in Dili, people have chickens and pigs so there is no waste food at home. Anything we do not eat ourselves goes to the animals. People buy the waste food from restaurants to feed their pigs and chickens.

For us, food security is equivalent to nutrition security. This is very crucial for our developing country.

Another important point I want to leave with you is this: we are trying to encourage investment in women and girls, to get them involved in this work. I am a veterinarian, and a field veterinarian, and I am working very closely with our farmers, especially the women and girls, to improve their livelihoods for the future. If we can convince more women to become involved in this project, and even get more women to become involved in the agriculture sector, there will be good returns to their villages.

Table 1. Summary of available data from five vaccination campaigns

<b>Details</b>	<b>Nov 2014</b>	<b>Mar 2015</b>	<b>Jul 2015</b>	<b>Nov 2015</b>	<b>Mar 2016</b>
Total number of chickens vaccinated	1865	2429	4218	3028	3076
Total number of households vaccinating	251	408	351	345	257
Percentage of households vaccinating	20.4	33.1	31.0	28.0	20.9
Average number of chickens vaccinated per household	7	8	12	11	12



The Timor-Leste Government, through the Ministry for Agriculture, also wants to encourage the community to be more involved in the agriculture sector, because as a country we cannot rely on petroleum or other industries to bring us national benefits.

### Acknowledgements

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Dr Joanita Bendita da Costa Jong, the first female veterinarian in Timor-Leste, is the newly appointed National Director for the Veterinary Directorate in Timor-Leste's Ministry of Agriculture and Fisheries. As a National Director, her role is to supervise three departments: the Department of Public Health and Animal Welfare, the Department of Controlling Medicines and Equipment for Animals, and the Department of the Veterinary Diagnostic Laboratory. All three departments play very important roles within the country's animal health development. Joanita is responsible for the supervision of data collection for Timor-Leste's national animal disease reporting system, and the management of data collected from vaccination programs for cattle, buffalo, pigs and chickens. She also performs ante- and post-mortem inspections at the national slaughter house. In her ten years there, Joanita has made significant contributions to the development of her profession through capacity building within the country's network of Livestock and Veterinary Technicians, Extension Workers and other animal health staff, as well as local and international NGOs.

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