

Smallholder farmers in Africa and Asia: The challenges and rewards of sustainable Newcastle disease control

Associate Professor Robyn Alders, AO

Faculty of Veterinary Science, University of Sydney

Director, International Rural Poultry Centre, Kyeema Foundation



THE UNIVERSITY OF
SYDNEY

Development Policy Centre
ANU, 27 August 2012



Acknowledgements

ANU – Stephen Howes and David Lucas

ACIAR, AusAID and AIFSC - Australian Centre for International Agricultural Research, Australian Agency for International Development and Australian International Food Security Centre

Universities of Zambia, Queensland & Tufts

Ministries of Agriculture/Livestock Development in **Angola, Malawi, Mozambique, Tanzania** and **Zambia**

Other donors: FAO, EU, Wildlife Conservation Society, USAID, Wildlife Health Network and Corridor Sands (now BHP Billington)

NGOs – especially ASVIMO, GALVmed, Global Service Corp, SCF and AFSAAP

Farmers, extension workers, veterinarians and researchers



Learning about Africa in Australia: a brief reflection

Celebration of African Australians National Awards 2012



Learning about family poultry:

3 production systems under 1 umbrella

Family poultry - small-scale poultry keeping by households using family labour and, wherever possible, locally available feed resources. Family poultry employs one of three different production systems and may involve chickens, muscovy, pigeons, mallard ducks, Guinea fowl, quail, turkeys or geese.

Increasing inputs



Why start with village poultry?

- Universally owned livestock species
- Lack of essential inputs in rural areas
- Village poultry production is efficient in terms of costs, labour inputs and environmental impact
- Vital role in rural families as they provide:
 - assets for women and children - petty cash
 - high quality protein and micronutrients
 - pest control
 - manure for vegetable gardens, and
 - social credit – ceremonies and rituals



An example from Southern Africa

In mixed farming systems in Southern Africa:

- very few households own cattle (~10-20%)
- some own small ruminants (~30-40%), but
- most own village poultry (70-80%)



Credit: Kyeema/Alders

Eggceptional value!

- One egg contains:
 - 315 kilojoules of energy
 - high quality protein
 - rich in essential amino acids)
 - Vitamins including Vit. A, B12, K and choline
 - minerals
- Sterile inside
- Easy to store
- Easy and quick to cook



Credit: FAO/Alders

Food sovereignty

- The right of nations and peoples to define their own food systems
- Local production for local consumption
- Vital contribution of indigenous plant varieties and animal breeds to human wellbeing



Credit: Kyeema/Alders

Appropriate disease surveillance, prevention and control

- Participatory epidemiology
- Gender-sensitive methodologies
- Establishing trust between poultry health services and producers



Improving village chicken production

- Interventions must be **cost efficient**
- Basic inputs include:
 - **management**
 - **husbandry** – disease control
supplementary feeding, shelter
 - **marketing**
 - **group formation**
- Should **complement other farm activities**



Credit: FAO/Alders

Newcastle disease is a major constraint

- History
 - ND endemic in many countries
 - Australian Poultry Industry
 - Strain NDV4-HR
 - Strain I-2



Credit: UQ/Spradbrow

Direct annual cost of uncontrolled ND assuming 30% mortality & sale price of USD 2 per bird

Country	Village chicken population	Annual cost of ND (USD)
Malawi	8,000,000	4,800,000
Mozambique	26,000,000	15,600,000
Tanzania	27,000,000	16,200,000

Components of a sustainable ND control program in rural areas

- **Coordination of activities,**
- **Appropriate vaccine and vaccine technology,**
- **Efficient extension material and methodologies,**
- **Simple M&E systems** with both technical and socio-economic indicators, and
- **Economic sustainability** – commercialization of the vaccine (~USD 1.00/250 doses) and vaccination services (community vaccinator charges ~USD 0.02/bird), and marketing of surplus birds and eggs.

Rewards of ND control campaigns



- Empowering women
- Stimulating local economies
- Strengthening linkages between animal health services and communities

Credit: AusAID/Alders

Moving from subsistence to income generation



Credit: Kyeema/Alders

Lao PDR



Credit: Kyeema/Bagnol

Tanzania

Women and children are the major beneficiaries



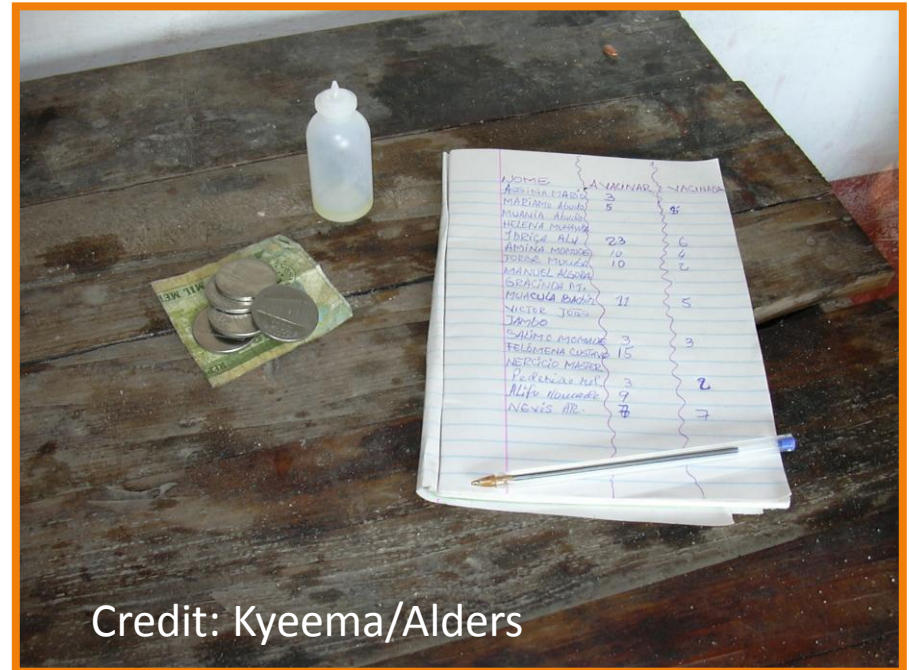
Approximately 50% female vaccinators



Credit: Kyeema/Alders

Cost efficient approaches to ND control

- Targeted epidemiological studies
- Strategic vaccination
- Monitor impact of ND vaccination program



Strengthening laboratory capacities



Credit: UQ



Credit: Kyeema/Alders

Mozambican village chicken farmers: problem ranking

	2003	2003	2005	2005
Problems	Men	Women	Men vaccinating	Women vaccinating
ND	1	1		4
Predators	2	2	5	1
Fleas	3	4	1	3
Internal parasites		3		5
Thieves	4	0	3	2
Snakes			4	5
Feed shortage			2	

What can families do with extra chickens?

- Send their children to school
- Buy (or barter) clothes
- Buy salt, oil, soap, etc
- Sell five roosters & buy one goat
- Buy medicine
- Offer a good meal to important visitors
- Eat chicken stew or boiled eggs

ND Control, village chickens & HIV/AIDS mitigation

Senhora Joaquina Guente
(Grandmother with three grandchildren; Mozambique)



Credit: Kyeema/Albers

Impact of pilot activities after 12 months in Dondo District, Mozambique

Total # of participating HHs	98
- # Female-headed HHs	63
- # Grandparent-headed HHs	29
- # Child-headed HHs	6
Total number children	364
% HHs with chickens after 12 months	58

Triple benefits of the village chicken & HIV/AIDS project

1. Direct support to the people affected or infected by HIV/AIDS
2. Income generation for the carers & the community-based organizations
3. An increase in the carrying capacity of the communities in terms of supporting welfare activities

Village chickens & wildlife conservation

Farmers & their chickens



Credit: Kyeema/Alders



Village chickens & wildlife conservation

... & the wildlife



Wise words from Mr Banda
UNZA Driver (Translator & Philosopher)

“Anyone who looks at a wild animal & sees
beauty ...

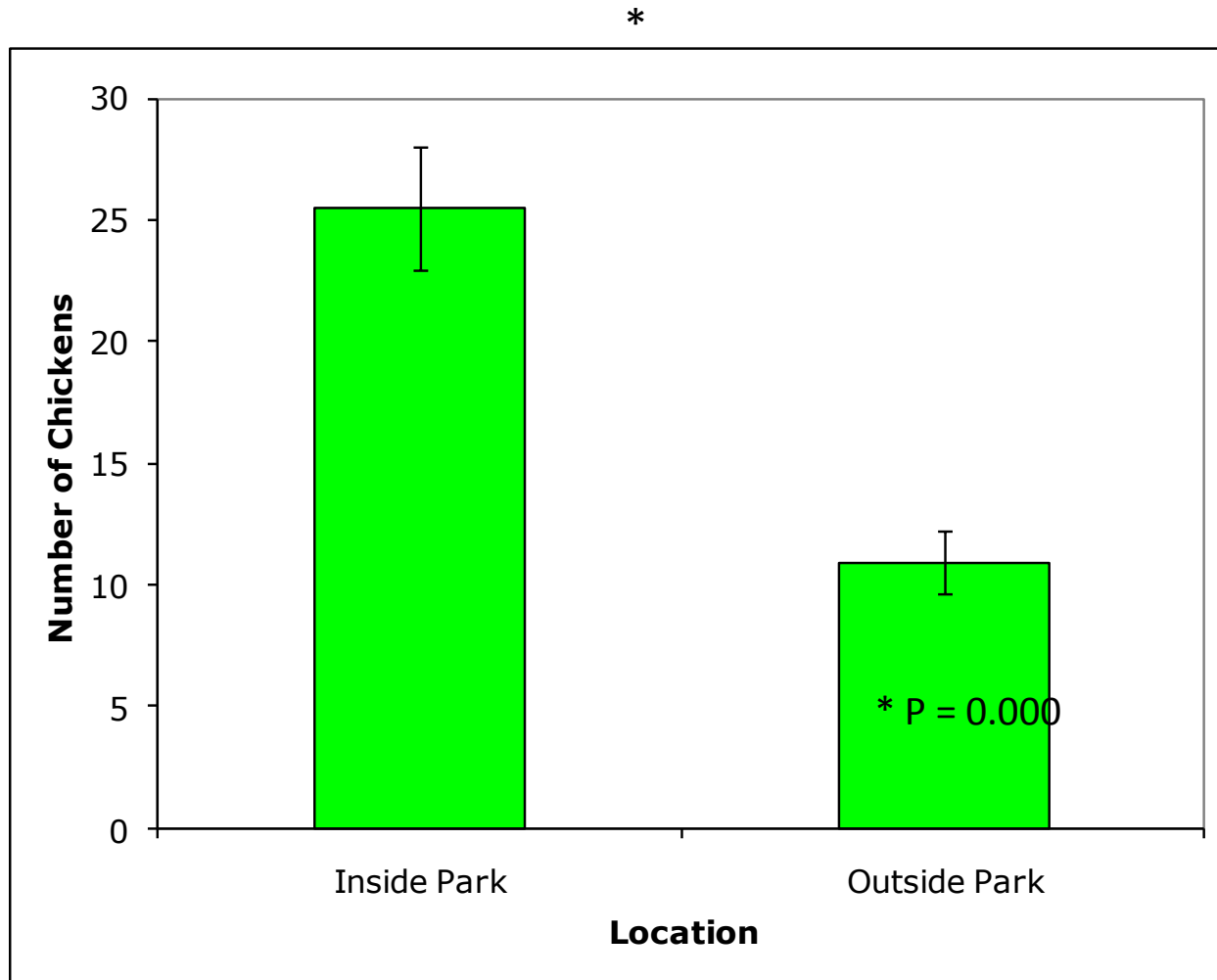
has already eaten enough.”

South Luangwa: Preliminary Data

Month and Year	Mean No. birds per vaccinating household
June 2007	7
March 2009	14

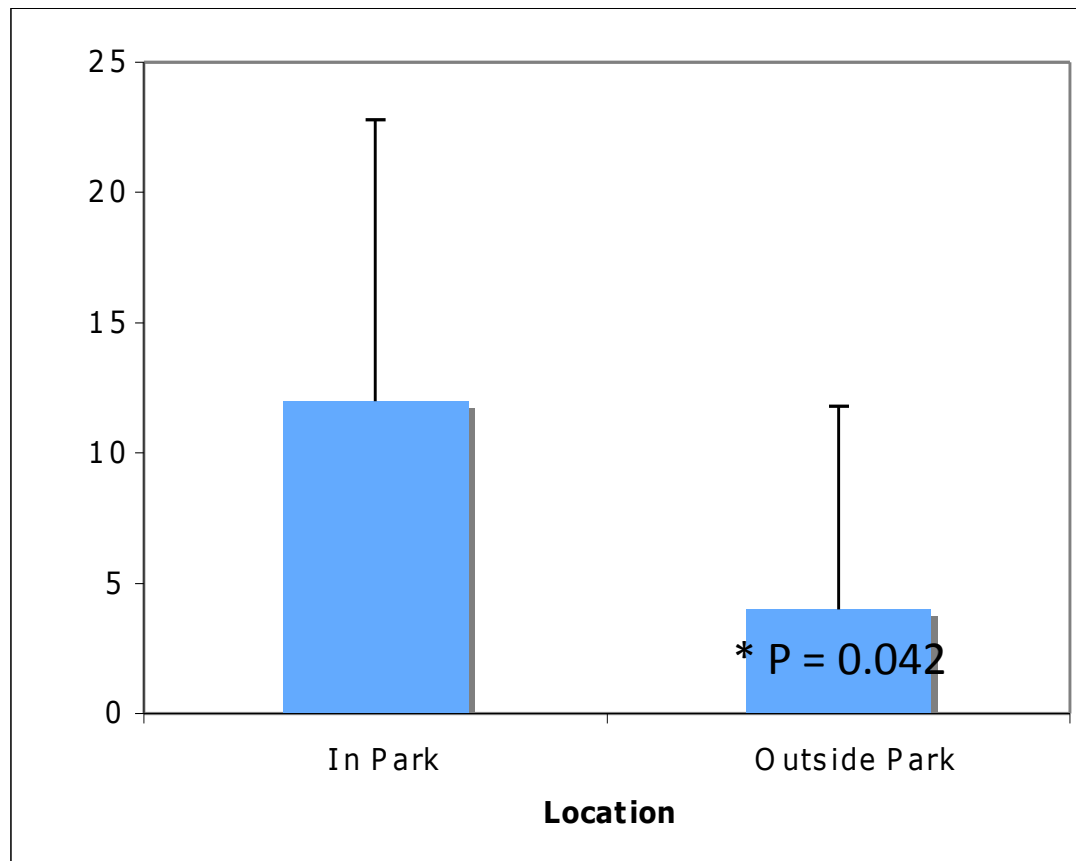
Data collated by Michelle Kneeland, V'12, Tufts

Limpopo Nation Park: Flock Data



LNP: Chicken Consumption

*



Outcomes

- **Significant contribution to MDGs**
- **Everyone loves a winner!**
ND control part of Mozambique's ruling party's political platform
- **Endorsement by national bodies**
Scaling up of Thermotolerant Vaccine Technology for the control of Newcastle disease in Tanzania funded by the Tanzania Commission for Science and Technology
- **Recognition by the Gates Foundation**
Collaboration with GALVmed
- **Recognition by the African Union**
At the request of the African Union, Kyeema Foundation is designing a multi-year project to expand ND prevention and control in Africa for submission to AusAID and other donors

Along came HPAI H5N1

- ND and HPAI: two of a kind
- ND coping strategies
 - Sell remaining flock to minimize losses
 - Slaughter and eat remaining flock
 - “Dead yesterday” carcasses (*ayam tiren*) marketed at discount prices
 - Carcasses disposed to minimize public embarrassment



Indonesia

HPAI: why has it been difficult to control in some countries?

Criteria	HPAI quickly controlled	HPAI control difficult
% of households raising poultry	Low	High
Producer-poultry health service links (including compensation)	Strong	Poor
Producer perceptions of disease	Germ theory	Traditional
Producer literacy rates	High	Low
Annual poultry mortality	Low	High
Poultry production quality assurance activities	Strong	Weak

The future: continue investing in appropriate research

- New R&D activity integrating family poultry and crop value chains in East and Southern Africa
- Village poultry are frequently a part of mixed farming systems
- Implemented by USyd



Australian
International
Food Security
Centre

aci.gov.au/aifsc

Partnerships for food security



Credit: Kyeema/Alders

One Health research plans

- Seeking efficient and gender-sensitive disease surveillance
- Study the impact of a single point of contact for rural women in relation to disease reporting



Credit: Kyeema/Alders

Thank you for your attention

Questions?

Comments?

