

# Backyard Poultry Enterprise: Challenges and prospects for more rapid rural poverty alleviation.

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**Samuel Adediran**, Kushwaha P,  
Dhawan M, Mosha R, Tindih H,  
Donadeu M and Traill P.

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## Outline

- **Introduction – GALVmed who we are, what we do, How we work**
- **Why backyard poultry (BYP)?**
- **Challenges & Opportunities in the BYP sector**
- **Newcastle disease of poultry**
- **How GALVmed improves livelihood through the BYP**
- **Lessons learnt and future activities**

## GALVmed - Who we are

- An **Animal health Product development & adoption Partnership** organisation
- A not-for-profit **Public-Private Partnership** – registered charity
- Sponsored by the UK Department for International Development (**DFID**), and with projects funded by BMGF.
- **Pro-poor focus:** working with key partners to make a **sustainable** difference in access to animal health products for poor livestock keepers
- Approx 30 staff - Offices in Edinburgh, Kenya & New Delhi



**Vision** - *Protecting Livestock, Improving Livelihood*

## Mission

To make a sustainable and impactful difference to the livelihoods of resource-poor farmers in developing countries by providing animal health tools within a sustainable economic framework



## Guiding Values

- Pro-poor empathy
- Focus
- Professional
- Competency
- Transparency
- Commitment
- Progressiveness

## Cattle

- East Coast Fever
- Contagious Bovine Pleuropneumonia
- Hemorrhagic septicaemia
- Trypanosomosis

## Sheep and goats

- Peste des petits ruminants (PPR)
- Contagious caprine pleuropneumonia
- Sheep & goat pox multivalent vaccine

## Multi-species

- Rift Valley fever

## Pigs

- Porcine cysticercosis
- African swine fever
- Classical swine fever

## Poultry

- Newcastle disease
- Highly pathogenic Avian Influenza
- Fowl Pox
- Multivalent poultry vaccine



## Global Access Charter?

We define Global Access (GA) as a principle applied through the value chain, from technology research to product use, which ensures sustainable access to animal health products and solutions needed by those for whom livestock is a lifeline, ultimately improving livelihoods.



# Global Access Charter

## Who is the GAC For?

GALVmed Staff, Internal & External partners, Everyone working with us

## When is Global Access Applicable?

“We consider Global Access to be relevant to the entire value-chain: from research to use with the livestock farmer as our point of focus.”





**GALVmed**

Protecting Livestock – Improving Human Lives

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# Rural (Backyard) Poultry





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- Newcastle disease of poultry
- **Why backyard poultry (BYP)?**
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# Why backyard poultry (BYP)?

- ✓ Livelihood of ~1 Billion in Africa & Asia depend on Livestock.
- ✓ Women own nearly 70% of estimated 1.2 billion and ~700 m BYP (Africa & Asia) (FAO 2009) .
- ✓ Strategic vaccination against ND in 11 countries reduced mortality by 80%. (IAEA 2004)
- ✓ Return on investment averaged (\$1= \$100) GALVmed India.
- ✓ ND vaccination increased income to women, improved household nutrition and disposable income



# Newcastle Disease (ND) Control

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# Impact of Newcastle Disease

ND is a contagious and often fatal viral disease affecting all species of birds. Avian strain of *paramyxovirus 1*”



Severity and Impact greatest in developing countries especially village backyard chickens (BYP).

Estimated 1.38 billion chickens in Africa  
~70 - 80% are in villages and at risk



# Challenges: ND control in BYP

- Neglected backyard poultry
- Commercially biased vaccines and AH products (large pack size)
- Poor cold chain facility
- Weak delivery systems
- Poor quality control
- Lack of trained vaccinators
- Poor awareness



# Important information about handling I-2

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Storage temperatures:

High 30-37°C – 3 days

Moderate 18 -20°C – up to 10 days

Fridge 2 -8°C - Up to 6 months or until expiry date

**DO NOT FREEZE**

Transport in cooler boxes with ice packs or wrap in damp clothes in baskets

Avoid vaccine exposure to UV light.

Do not vaccinate sick chickens



# ND: GALVmed Approach



1. Evaluate vaccine technologies, identify products adaptable to each country's BYP needs.
2. Promote **sustainable** value chain PPP (manufacture, registration, cold chain, service delivery etc).
3. Support holistic production approach
4. Empower women & Improve livelihood

# ND: GALVmed Approach

## 1. Evaluate Vaccines / technologies

- a) Heat adaptable I-2 vaccine (Africa)
- b) Freeze dried LaSota (India)
- c) Fast Dissolving Tablet

**Partners - MCI Morocco,  
Deltamune South Africa  
- Hester India**





# Current ND vaccine technologies



Vaccine	Key characteristic	Strain	Target region	
ND I-2 vaccine	-Thermostable ND virus vaccine - Freeze-dried & liquid form	ND I-2	Africa, South Asia outside India	Veterinary Microbiology 68 (1999) 131-139
ND D-58 vaccine	-Thermostable ND virus vaccine - Pelletized oral vaccine	ND D58, isolated in India	India (and South Asia?)	Ananth et al. 2008. Int. J. Poult. Sci., 7: 368-373
Tablet ND vaccine	-Fast dissolving tablet (FDT) - Vaccine Platform technology	Evaluated on Lasota strain	Global	<a href="http://www.path.org/publications/">http://www.path.org/publications/</a> <a href="http://veterinaryrecord.bmj.com/content/early/2014/03/03/vr.101926">http://veterinaryrecord.bmj.com/content/early/2014/03/03/vr.101926</a>
Thermostabilised ND Lasota vaccine	- Platform technology for thermostabilising normal ND vaccines	Evaluated on Lasota vaccine	India but targeting global access	Vaccine 19 (2001) 834–839

# GALVmed Approach

## 2. Sustainable value chain PPP and adoption

- a) Product development
- b) Registration and regulations
- c) Marketing and Distribution models
- d) Cold chain support
- e) Business capacity development



Protecting Livestock – Improving Human Lives





# ONDOA UMASIKINI KWA KUDHIBITI KIDERI



## Chanja kuku wako!

Mahali: \_\_\_\_\_

Tarehe: \_\_\_\_\_

Muda: \_\_\_\_\_





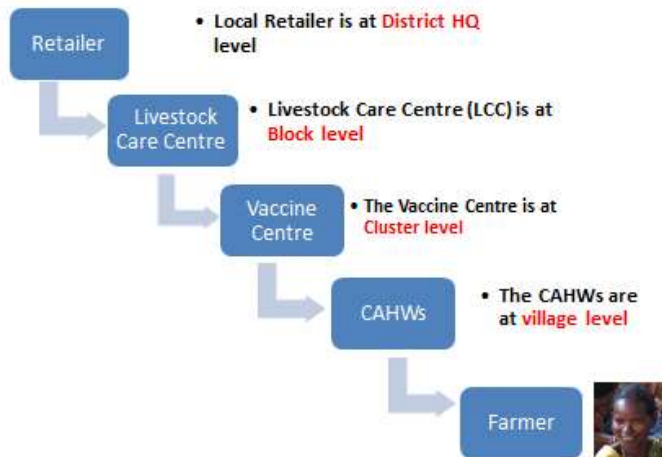
# GALVmed Approach

## 3. Holistic approach & Gender Focus

- a) Entire value chain approach
- b) Deworming and vaccination synergies
- c) Local housing for chicks
- d) Local feed supplements
- e) Business management skills for women



### Vaccine supply Chain







Jamhuri ya Muungano wa Tanzania  
Wizara ya Maendeleo ya Mifugo na Uvuvi

# DHIBITI UGONJWA WA MDONDO

**2014** CHANJA KUKU WAKO KILA BAADA YA MIEZI  
4 KWA KUTUMIA CHANJO AINA YA 1-2



Weka alama  
kwa kazi  
iliyokamilika



Maabara Kuu ya Taifa ya Mifugo - Temeke  
Kitengo cha Uzalishaji Chanjo  
E.L.P. 9254, DSM, Tanzania  
Simu: 022 - 3863104  
Barua pepe: [virology@raha.com](mailto:virology@raha.com)



# Rural Poultry Production Calendar

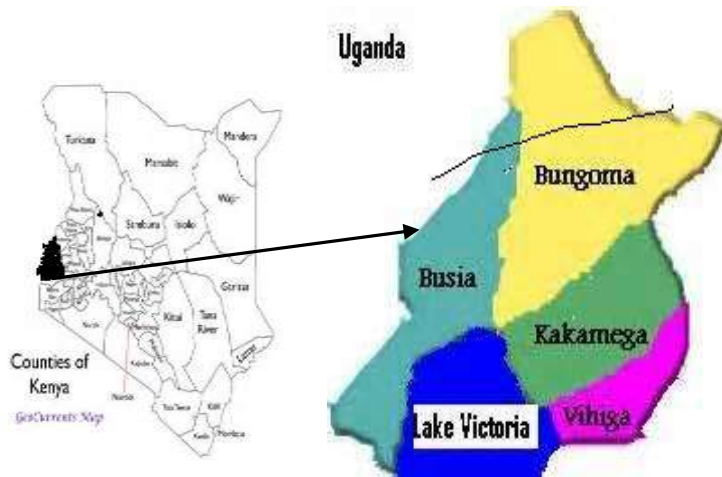




# ND Control programs in some countries

**Africa** – Tanzania, Cameroon,  
Burkina Faso, DRC  
Kenya, Uganda.

**South Asia** – India, Nepal  
Bhoda Milk Producers Association  
2 Locations- Morada &  
Rasgovinpur.  
144 Villages 92 participated



# ND distribution models

- **Private veterinarians:**

- 1- Burkina Faso
- 2- Lesotho

- **NGOs:**

- 3- Nepal: Heifer International
- 4- India : BMPCS
- 5- India: PRADAN
- 6- Cameroon: Heifer International
- 7- DRC: CAVTK

- **NGOs + private sector:**

- 8- Tanzania: CAHNET + local shops



# Private veterinarians: Burkina Faso



Private vet



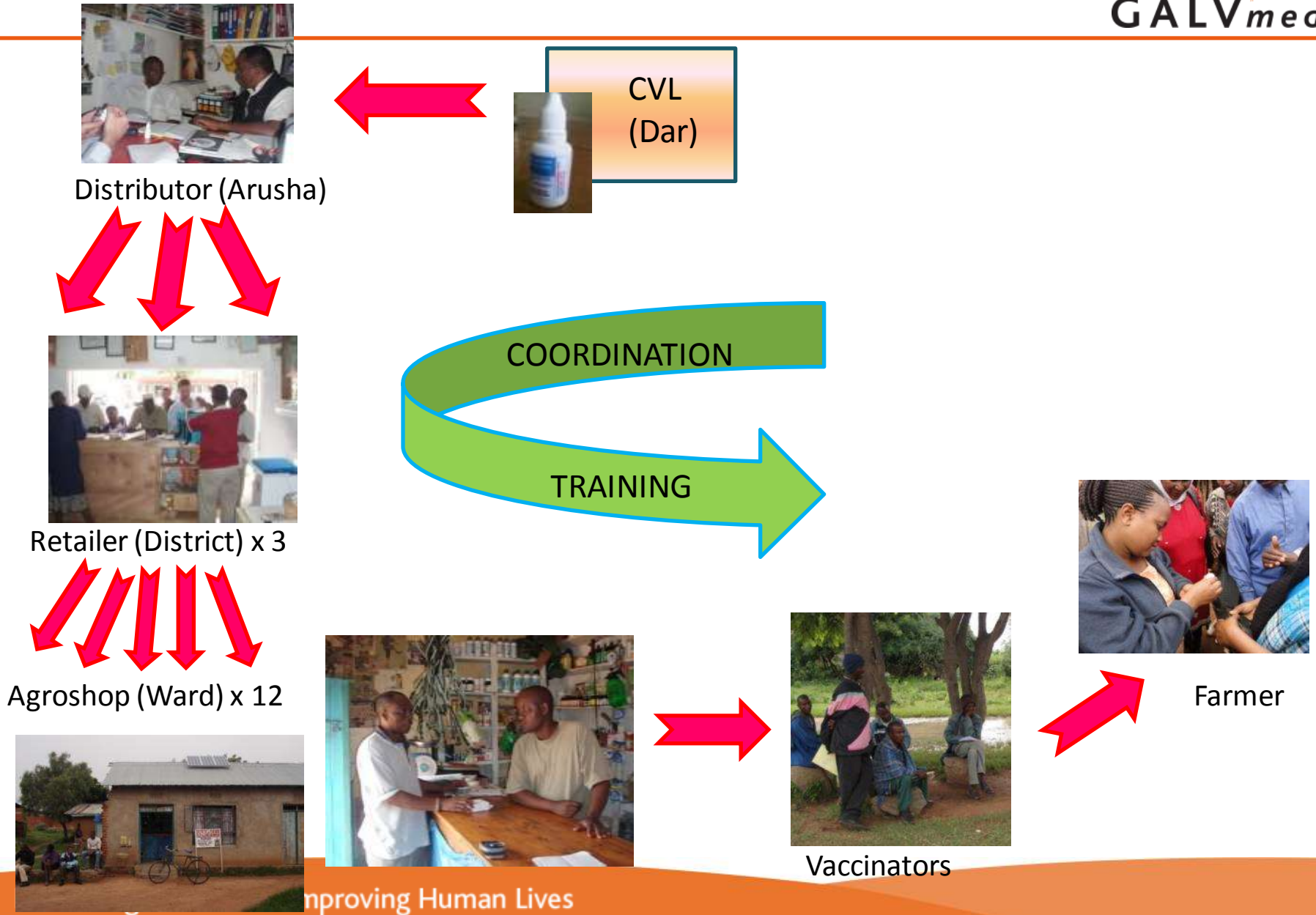
Vaccinators



Farmer



# NGOs + private sector: Tanzania



# Examples from Pilot Projects



Training of  
trainers in  
Tanzania



Training of  
Community  
Animal  
vaccinators in  
Burkina Faso

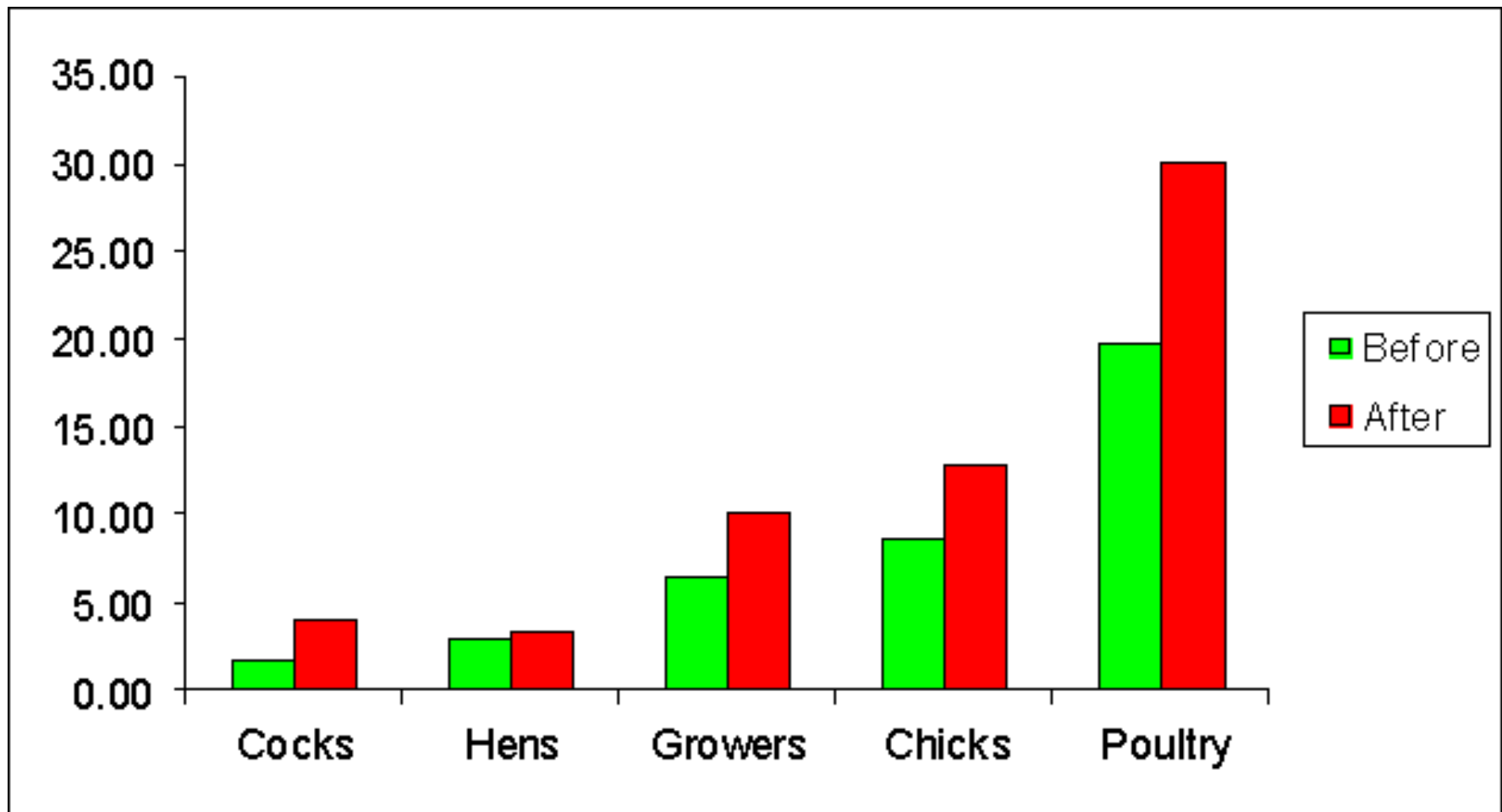


# Impact of ND Control intervention



- Poultry/HH increased 100% from 11.3 – 22.6 Baseline vs. final Survey.
- Monthly intake of meat & or fish increased avg. 1.63 times/m/HH.
- Weekly egg production increased 0.42 eggs (32%) a week per/HH
- Monthly poultry production increased 47%, (3.30 to 4.84 poultry)
- Annual net poultry income/HH increased by 5,188 INR (USD 95.65)

# Comparable increase in poultry before & after intervention





# Newcastle Disease Vaccine & Child Nutrition



*“In the past, many of our chickens were killed by disease, leaving only a handful of pullets and hens... Since the birds were vaccinated, none have died... Our flock has grown again and we now have lots of birds. We have just sold six chickens and made a whopping profit... The income means that we can afford to educate our children and buy them proper food and decent clothes.” (Mrs Padma Soren, Orissa, India)*

*“This is possibly the easiest, quickest and most economic way of reaching out to the poor of the world with visible results in helping alleviate poverty.<sup>1</sup>” (Mr Shashi Kapur)*

<sup>1</sup> Kapur, S. *Independent Assessment of GALVmed Interventions in Poultry in South Asia and Africa*. Commissioned by the Bill & Melinda Gates Foundation. 2013.



- Strategic vaccination and deworming = win - win strategy.
- Use Thermo- tolerant ND vaccine where available.
- Promote PPP - interaction and collaboration between veterinary and extension services, farmers and other stakeholders (NGOs).
- Use simple easy to use vaccine delivery methods (droppers).
- Provide small size doses (50 -100)
- Price structure is critical to sustainability.
- Feed supplementation, anti-parasitic treatment, improved housing etc. effective together with vaccination.

# Conclusions from Lessons Learnt



- Evaluate & Use available local feed supplements.
- Chick housing enhance predator control and improved feeding.
- Typical successful enterprise could manage 10 hens, 3 cocks, 150 chicks, 150 growers.
- Use Country specific, local language extension leaflets.
- Organised local Farmer Associations facilitates better access to vaccines, drugs and market access



**THANK YOU!!**

**For thinking of Me!!!**