# Farmers' perceptions on H5 vaccination (and other interesting topics)

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Eric Brum, DVM
Chief Technical Advisor – FAO ECTAD Indonesia
Clinical Assistant Professor – Tufts Cummings School of Veterinary Medicine, USA

Australia Indonesia Partnership
Kemitraan Australia Indonesia

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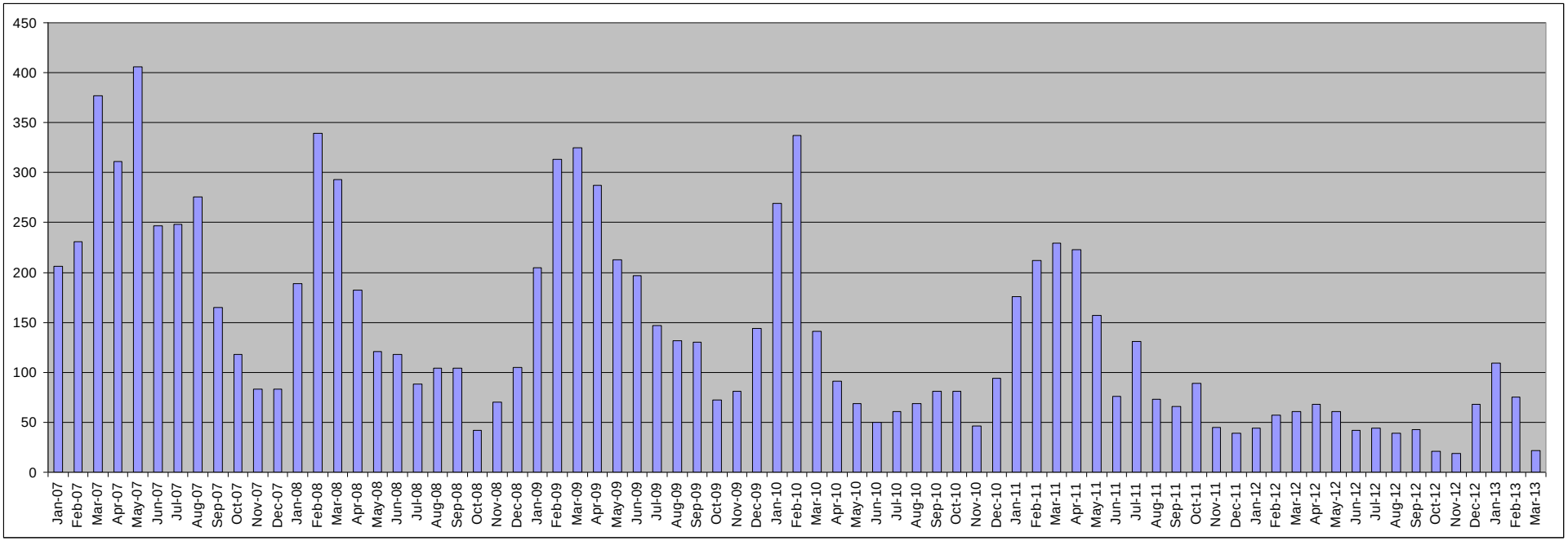
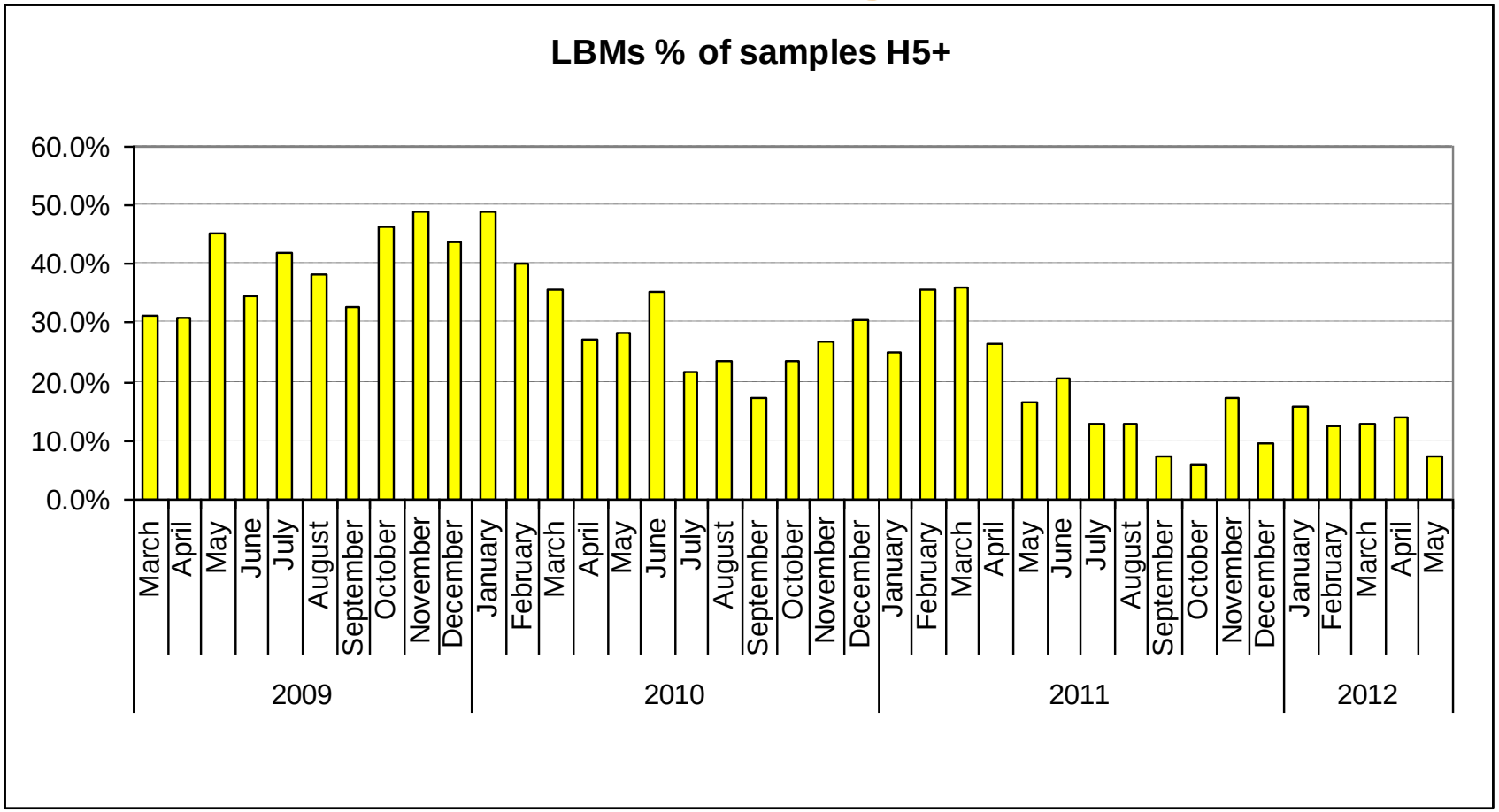
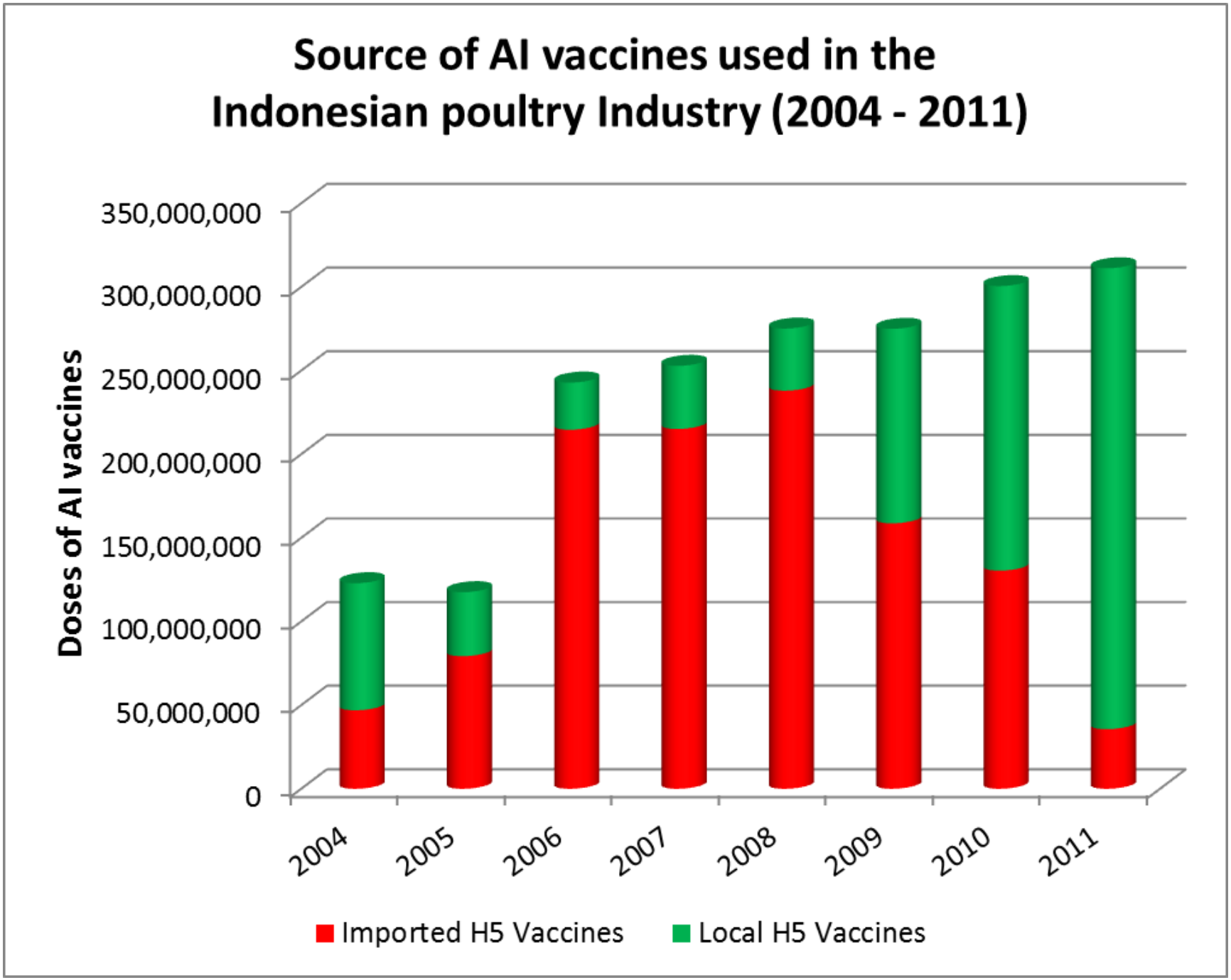
# Village HPAI outbreaks detected by PDSR by month, all provinces 2006 - present



# Percent H5-positive live bird markets in greater Jakarta by month via environmental sampling, 2009-12






*Source: Directorate of Animal Health and Indonesian Breeder Association GAPPI (modified)*

# How have we tried to learn about how the world looks through poultry farmers' eyes?

- Focused on layer farmers
  - May pose significant AI risk
  - Long-lived birds and long-term investment
  - **Independent**
- **Observed** farming activity and farmer behavior
- Conducted quantitative and qualitative production assessments of individual farms
- Conducted semi-structured interviews of farmers
- **Dialogue** with farmers during National Farmers' Seminars
- Performed questionnaire-based surveys of farmers re: vaccination
- **Help farmers address the issues that are important to them**

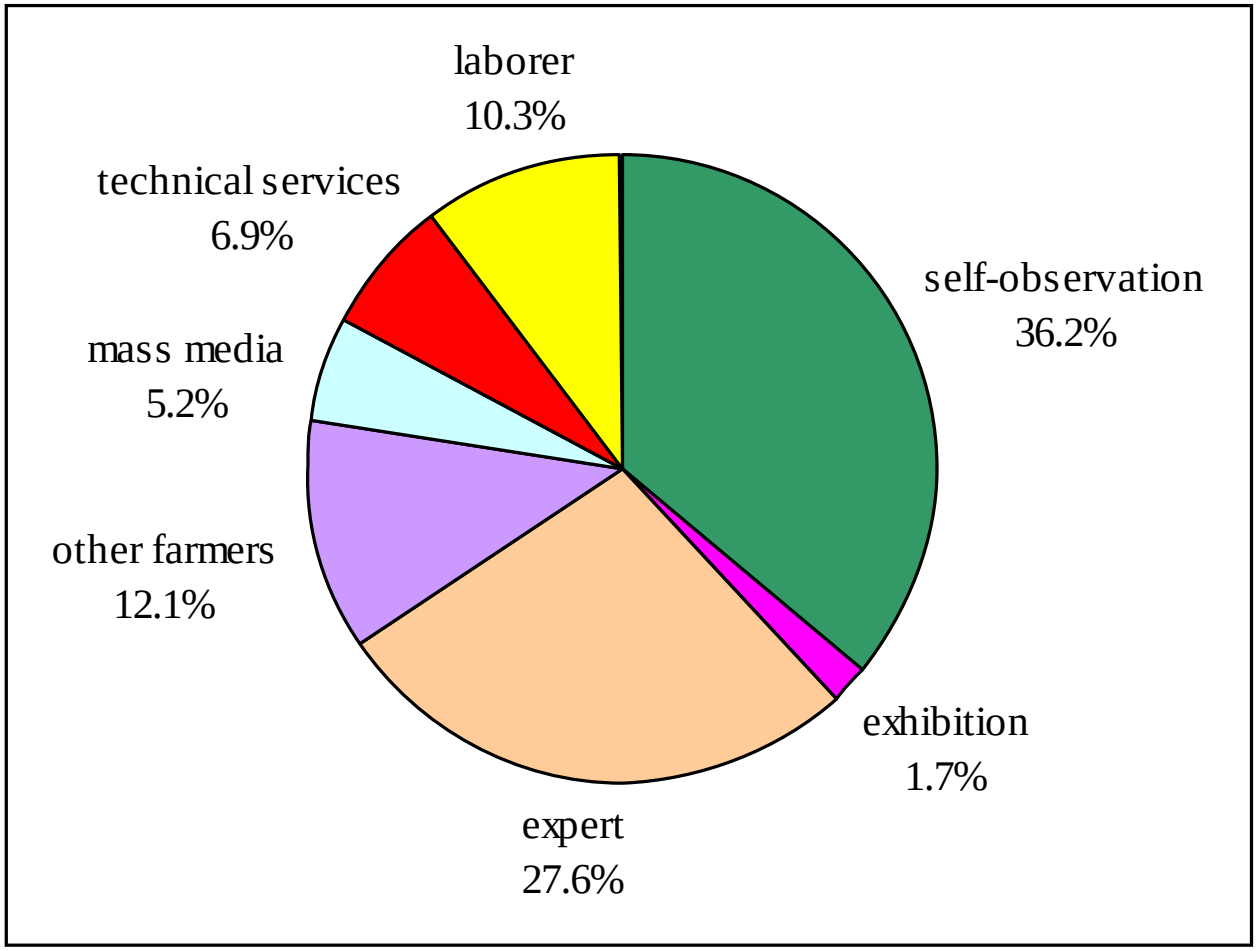
# How do we engage with farmers programmatically?

- Commercial Poultry Health (CPH) programme: *provide specialized technical support* ***directly to farmers***
  - **Biosecurity cost-effectiveness study** on 6 independent layer farms in high-risk HPAI area of Indonesia
  - Livestock and poultry trade expositions
    - Indolivestock Expo
    - International Livestock and Dairy Expo (ILDEX)
  - National Farmers' Seminars
- Veterinary Commercial Poultry Health (PVUK) programme: *local government technical support to farmers in their area*
  - Building trust between local government veterinary services and poultry farmers
  - Farm assessments and development of farm plans → ongoing follow-up
  - Farm investigations → disease outbreaks, production problems

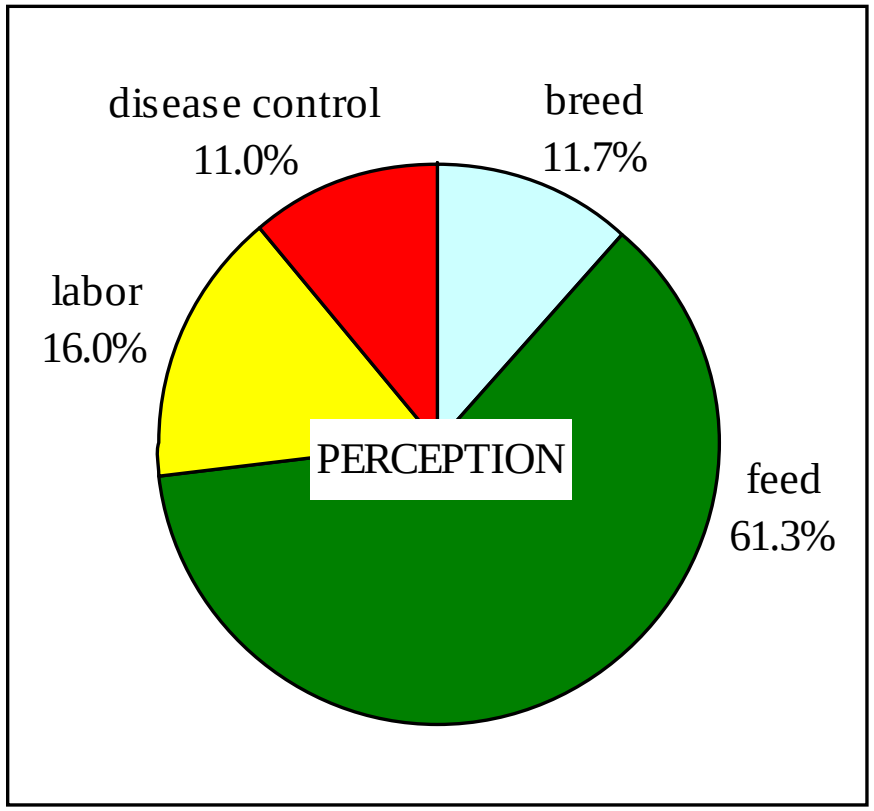
# Key early findings

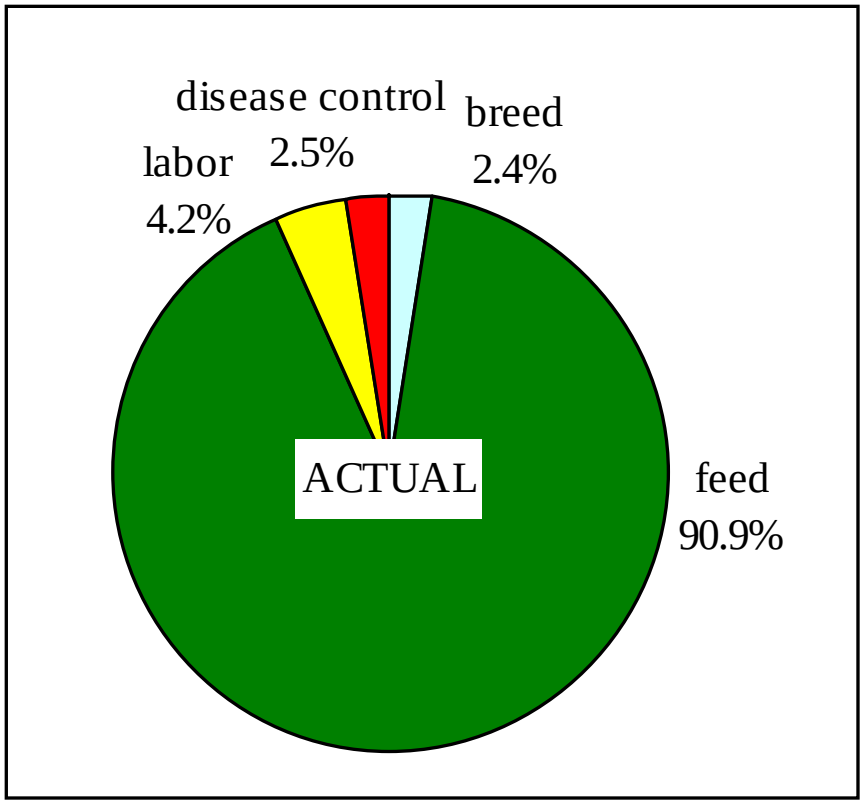
- Virtually no independent source of quality technical advice
- AI vaccination practices on all layer farms were insufficient
  - 50% of farms not using recommended vaccine stains
  - Initiating vaccination too late in the layer bird's life cycle
  - Most farms not vaccinating during lay
  - Inadequate protection against H5 (via HI titre) in both young age groups and mature laying age groups
- Tracking of inputs, outputs, and expenditures was absent on all study farms
  - Farmers unable to determine egg-laying rate (ELR) or feed conversion ratio (FCR) → unable to track productivity!
  - Farmers not tracking financial inputs and outputs → unable to determine profit margin

# Information sources influencing farmers' resource allocations



# Farmers' perception vs actual production cost structure



# Vaccine

- AI
  - Vaccine selection is poor:  poorly matched H5N2
  - 18w:  GMT 208, 100% protected
  - 5w, 15w, ??, ??
  - Not enough doses
  - First vaccination too late (2-3w, 6-7w, 19w, 35w)
- ND
  - Vaccine selection good
  - 18w:  100% protected
  - Need to verify protection during lay
  - Remove ND-live @ 17w

| | |
|---|---|
| Vaccine technique |  |
| AI vaccine product |  |
| AI vaccine schedule |  |

# Interpreting serology

| Flock/HH | Age of Birds | Vaccination History (Age of Vaccination) | Last Vaccination intervals | Antibody Titer Againts AI Virus (Log 2) | | | | | | | | | | | | | GMT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | | 0 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | 4076 | |
| | 86 W | N/A | N/A | 6 | 5 | 4 | 3 | 2 | 4 | 1 | | | | | | | 4,5 |

| Kandang | Umur Ayam | Vaksinasi yang Telah Dilakukan | Jarak dengan Vaksinasi Terakhir | Titer Antibodi Terhadap : Virus AI | | | | | | | | | | | | | GMT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | | 0 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | 4076 | |
| | 90 W | | 68 W | | | | | | 4 | 7 | 3 | 1 | | | | | 68 |

# Interpreting serology

| Flock/HH | Age of Birds | Vaccination History (Age of Vaccination) | Last Vaccination intervals | Antibody Titer Againts AI Virus (Log 2) | | | | | | | | | | | | | GMT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | | 0 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | 4076 | |
| | 89 W | N/A | N/A | | 2 | 4 | 11 | 4 | 3 | | | | | | | | 8,6 |

| Kandang | Umur Ayam | Vaksinasi yang Telah Dilakukan | Jarak dengan Vaksinasi Terakhir | Titer Antibodi Terhadap : Virus AI | | | | | | | | | | | | | GMT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | | 0 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | 4076 | |
| | 86 W | | 20 W | | | | | | | | 1 | 5 | 8 | 1 | | | 388 |

***FAO CPH – preventing bad decisions daily***

# Vaccination survey

- One-page, anonymous questionnaire
- Completed by all farmers participating in FAO National Farmers' Seminar in October, 2013.
- NOT performed on a random sample
- NOT representative of entire Indonesian poultry industry

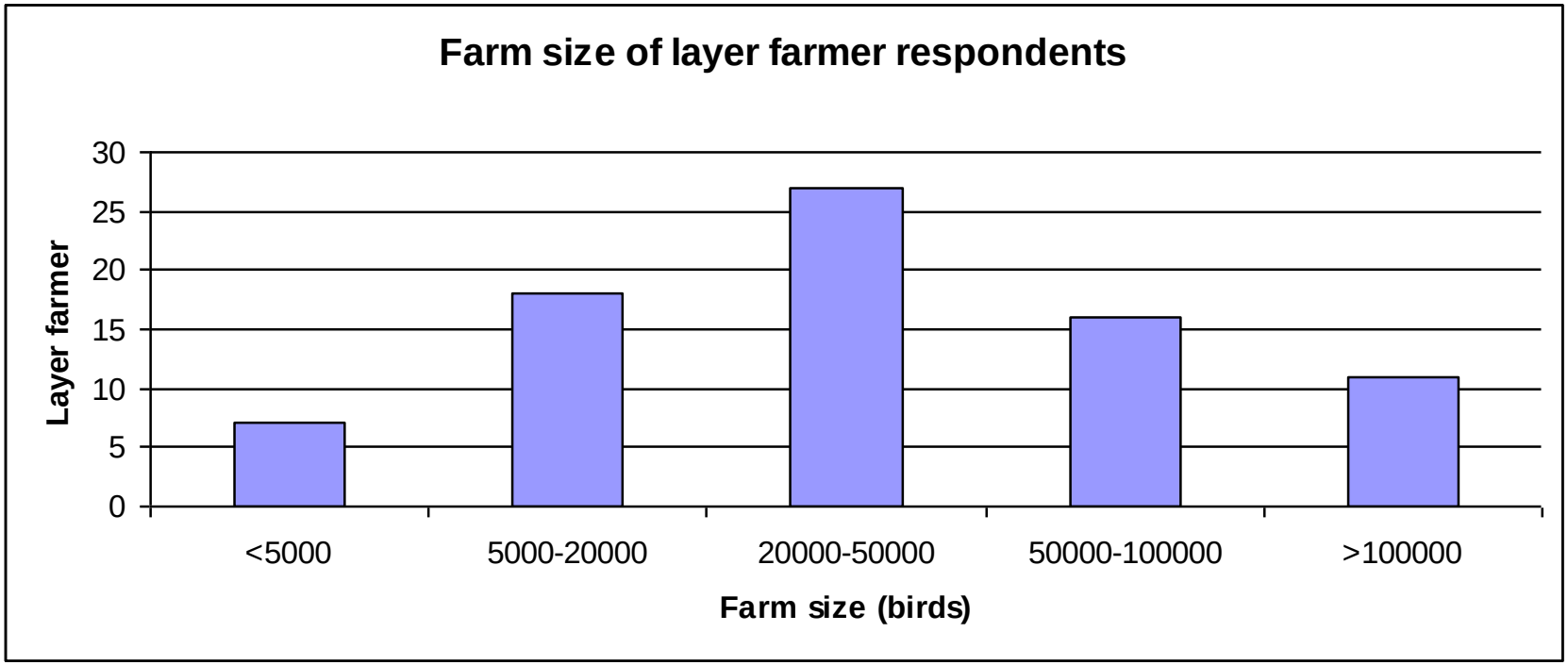

Seminar Peternak Nasional 2013
Praktek Biosekuriti Yang Menguntungkan dan Pencegahan
Virus Clade 2.3.2.1
Peternakan Petelur Komersial
Dua Convention Center
EGGTRY

# Layer farmers surveyed

| Province | % | Count |
|---|---|---|
| Lampung | 11% | 10 |
| Banten | 8% | 7 |
| DKI Jakarta | 2% | 2 |
| **West Java** | 31% | 27 |
| Central Java | 6% | 5 |
| East Java | 2% | 2 |
| | | |
| **South Sulawesi** | 33% | 29 |
| Central Sulawesi | 2% | 2 |
| Southeast Sulawesi | 1% | 1 |
| North Sulawesi | 2% | 2 |
| Unknown | 1% | 1 |
| **Total** | | **88** |

- Majority from western Java market
- South Sulawesi utilizes pullet system

# Layer farm size



# AI vaccine product currently in use

| Vaccine | % | Count |
|---|---|---|
| CAPRIVAC | 22% | 19 |
| HARBIN | 1% | 1 |
| INTERVET | 1% | 1 |
| IPB SHIGETA | 3% | 3 |
| LAYERMUN | 1% | 1 |
| MEDION | 18% | 16 |
| PROTEK | 1% | 1 |
| SANBIO | 1% | 1 |
| VAKSINDO | 17% | 15 |
| Not clear | 17% | 15 |
| No response | 9% | 8 |

- **at least 61% using locally matched vaccine**
- 1 farm using two vaccines simultaneously
- 1 farm using three vaccines simultaneously

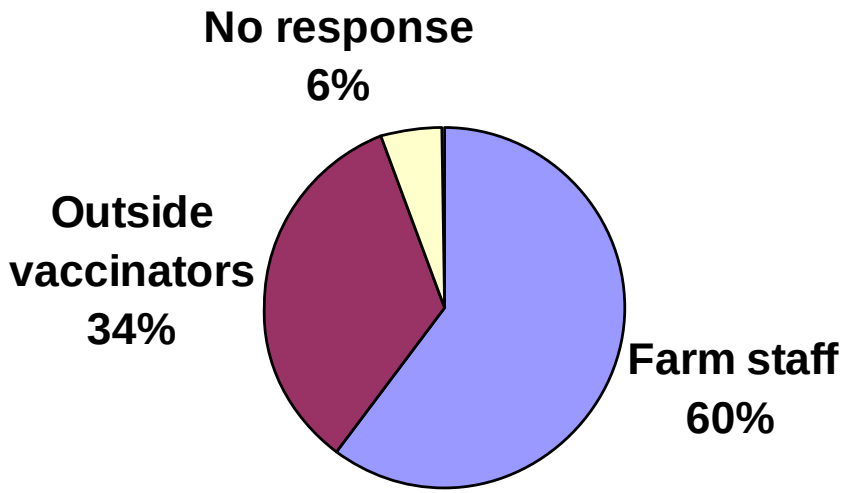
# AI vaccine product currently in use

| Vaccine | % | Count | Local mono | Local bivalent | Local trivalent | AI-ND |
|---|---|---|---|---|---|---|
| CAPRIVAC | 22% | 19 | 1 | | | 1 |
| HARBIN | 1% | 1 | | | | |
| INTERVET | 1% | 1 | | | | |
| IPB SHIGETA | 3% | 3 | 1 | | | |
| LAYERMUN | 1% | 1 | | | | |
| MEDION | 18% | 16 | | 1 | 4 | 3 |
| PROTEK | 1% | 1 | | | | |
| SANBIO | 1% | 1 | 1 | | | |
| VAKSINDO | 17% | 15 | | 2 | | 2 |
| Not clear | 17% | 15 | | | | |
| No response | 9% | 8 | | | | |

# How often do you vaccinate against AI?

| | Vaccinate against AI | Vaccinate at least 3 times before production | Vaccinate at least 2 times during production | Vaccine at least 3+2 |
|---|---|---|---|---|
| Layers (88) | | | | |
| Breeders (8) | | | | |
| Broilers (54) | | | | |

# Who performs vaccination on your farm?

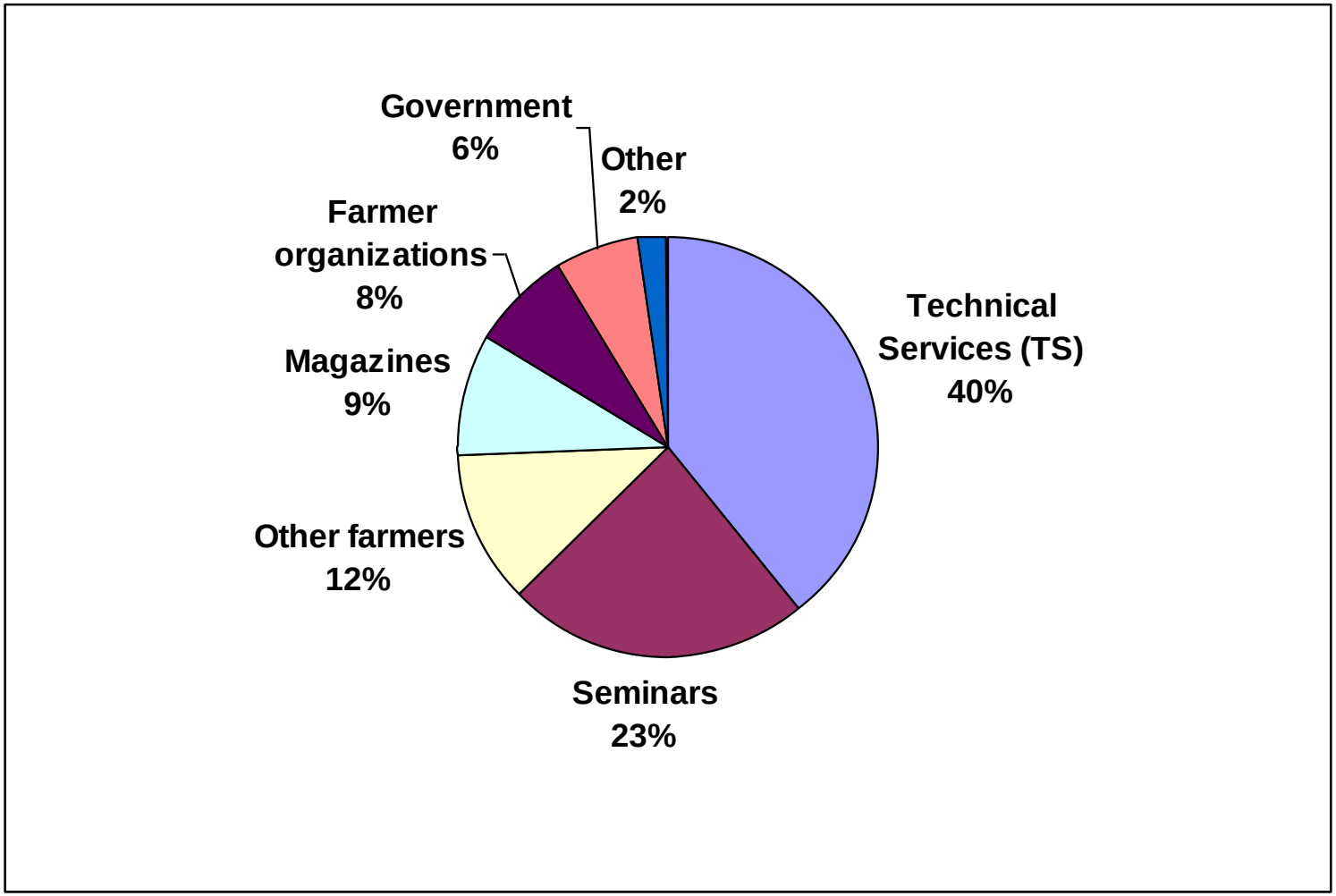


# What are the reasons that you don't vaccinate during production?

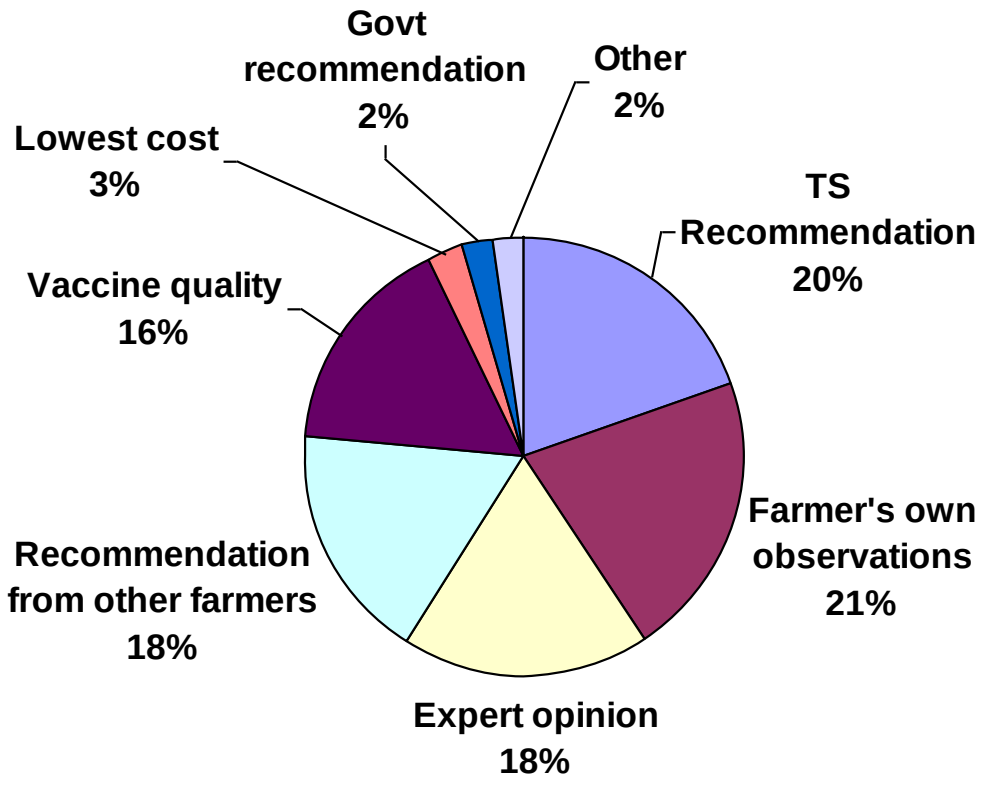
| Reason | % | Count |
|---|---|---|
| Vaccination during lay causes decreased production (**egg drop**) | 39% | 7 |
| Too expensive | 22% | 4 |
| Other | 17% | 3 |
| No additional benefit because the birds are already protected | 17% | 3 |
| Too difficult to vaccinate birds during production period | 6% | 1 |

- Other reasons given included: because "titres are still high" and "still under consideration"

# Where do you receive the best information about AI vaccination?



# How do you decide which AI vaccine product to use?



# What problems have you encountered with AI vaccination?

| Problem | % | Count |
|---|---|---|
| **Not sure which product to choose** | 32% | 20 |
| AI vaccine too expensive | 18% | 11 |
| Not sure when to vaccinate against AI | 16% | 10 |
| Other | 15% | 9 |
| AI vaccination difficult to implement (e.g. hard to schedule, hard to vaccinate all birds) | 11% | 7 |
| Vaccine not effective | 8% | 5 |

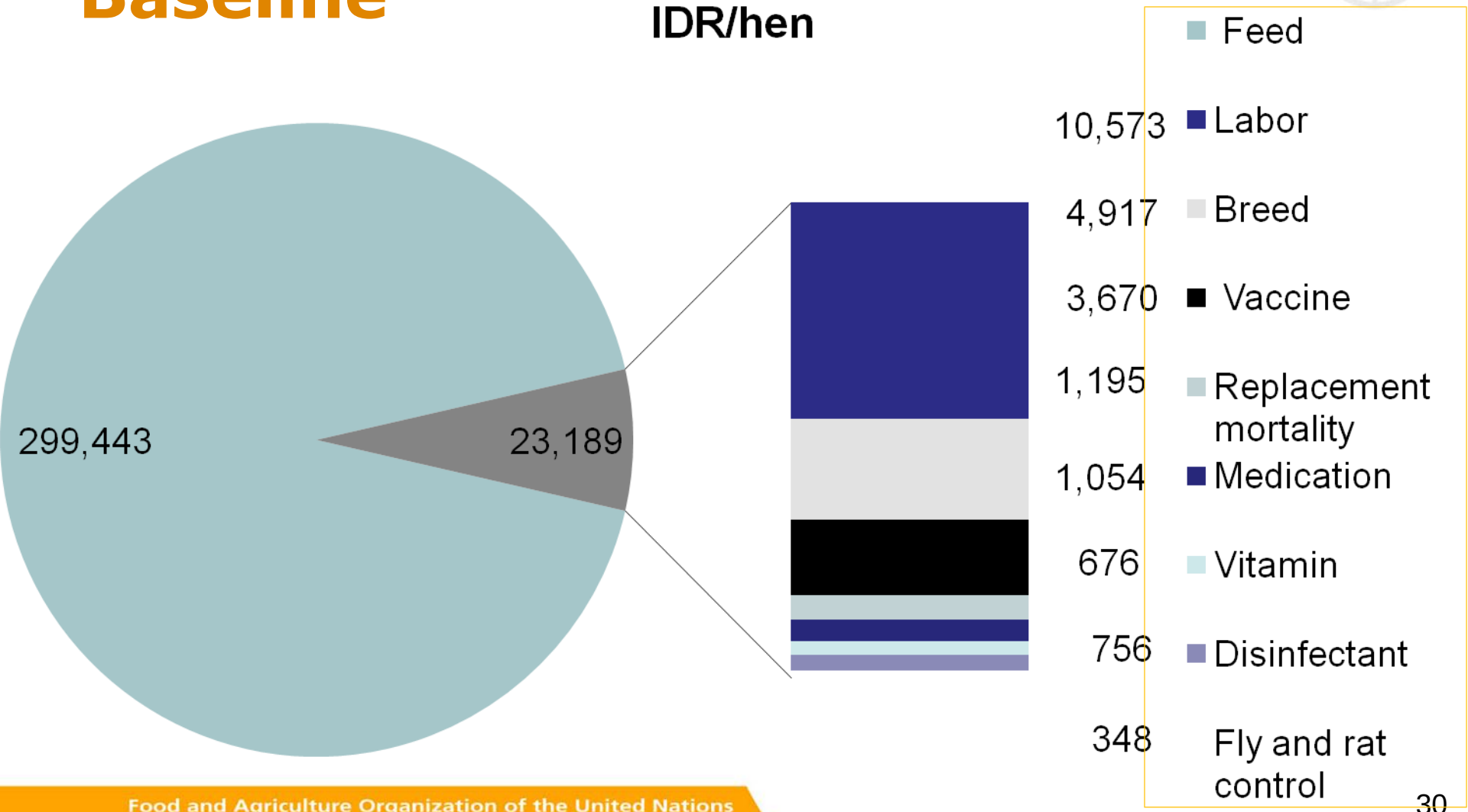
- "Other" reasons included:
  - There are no problems ☺ (5)
  - Decreased production/stress on birds (2)
  - Slow Ab titre reporting from laboratory (1)

# How can AI vaccination be improved?

| Improvement | % | count |
|---|---|---|
| **Better information on how to choose AI vaccine product** | 34% | 41 |
| Clear recommendations on vaccination schedule | 21% | 25 |
| Better regulation of vaccine registration | 16% | 19 |
| Better quality vaccinators | 16% | 19 |
| Easier to dispense vaccine (e.g. drinking water vaccine, vaccination at hatchery) | 8% | 9 |
| Less expensive vaccine | 5% | 6 |
| Other | 1% | 1 |

- What are the benefits of vaccinating against AI?
  - → Prevent bird flu!!

# Production Cost Structure Baseline



# The layer farmer's bottom line


PEMILIHAN VAKSIN YANG TEPAT ADALAH LANGKAH PERTAMA
PROGRAM VAKSINASI AI YANG EFEKTIF


SELALU VAKSINASI AI 3 KALI SEBELUM PRODUKSI DAN 2 KALI SELAMA PRODUKSI


VAKSINASI KASAR ATAU LEMBUT ?
LEMBUT LEBIH BANYAK DAPAT TELUR


FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)
Nasi-hat Dari Keluarga
ASUH!!
JADWAL VAKSINASI AI
3+2!
Ayam jangan
sampai Tuli
WAH...
BETUL!!
Vaksinasi benar =
Tepat Vaksin +
Tepat jadwal +
Tepat Teknik
Nasi-hat asli!!
LOKAL!!!
ASK
EXPERT!
Dapatkan jawaban dari pertanyaan Anda seputar kesehatan dan produksi unggas di sini!
WARUNG NASI-HAT
NASI-HAT SEGAR
SAMBAL BIJAK
AYAM BERTUTU ASUH
SATE LILIT ASUH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PLA01
Telur tak akan berkurang...
asal jaga kebersihan dan
perlakukan ayam dengan lembut
WAH...
100% BENAR BU
3 kali sebelum produ
dan
2 kali selama produ
SAMBAL
AYAM
November 2013 Desember


MAYA DHIDAG
2014
Oktob


STOP
DILARANG
MASUK !!!


MITSUBISHI
AD 1537 ZE


***"Tak kenal maka tak sayang!"***

**Peraturan harus jelas dan mudah dilihat.**


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