Reducing antibiotic use in food animals: Status, challenges and initiatives in Vietnam

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Workshop on National Action Plan on AMR for Developing Countries

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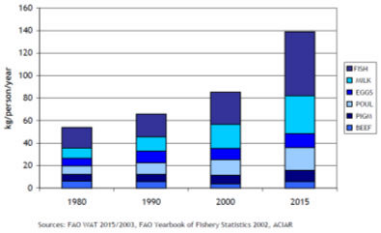
Agenda

- **Background**
  - ***Drivers of AMU in Vietnam***
  - ***Quantification of AMU and AMR in animal production***
- **Legal framework and initiatives**
  - ***The current state***
  - ***Vietnam Action Plan for the reduction of AMU and AMR***
- **Intervention studies: the ViParc Project**

Vietnam: Drivers of antimicrobial usage

Drivers of AMU in animal production

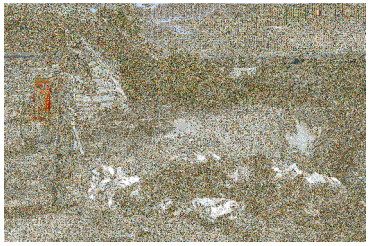


- Rapid intensification of animal production

- High incidence of infectious diseases (30-50% Mt in poultry)
- Access to a vast range of antimicrobials 'over the counter'

- ~50-75% commercial feed rations medicated

- Lack of veterinary advisory and diagnostic capacity



Antimicrobial usage in chicken and pig farms in the Mekong Delta of Vietnam

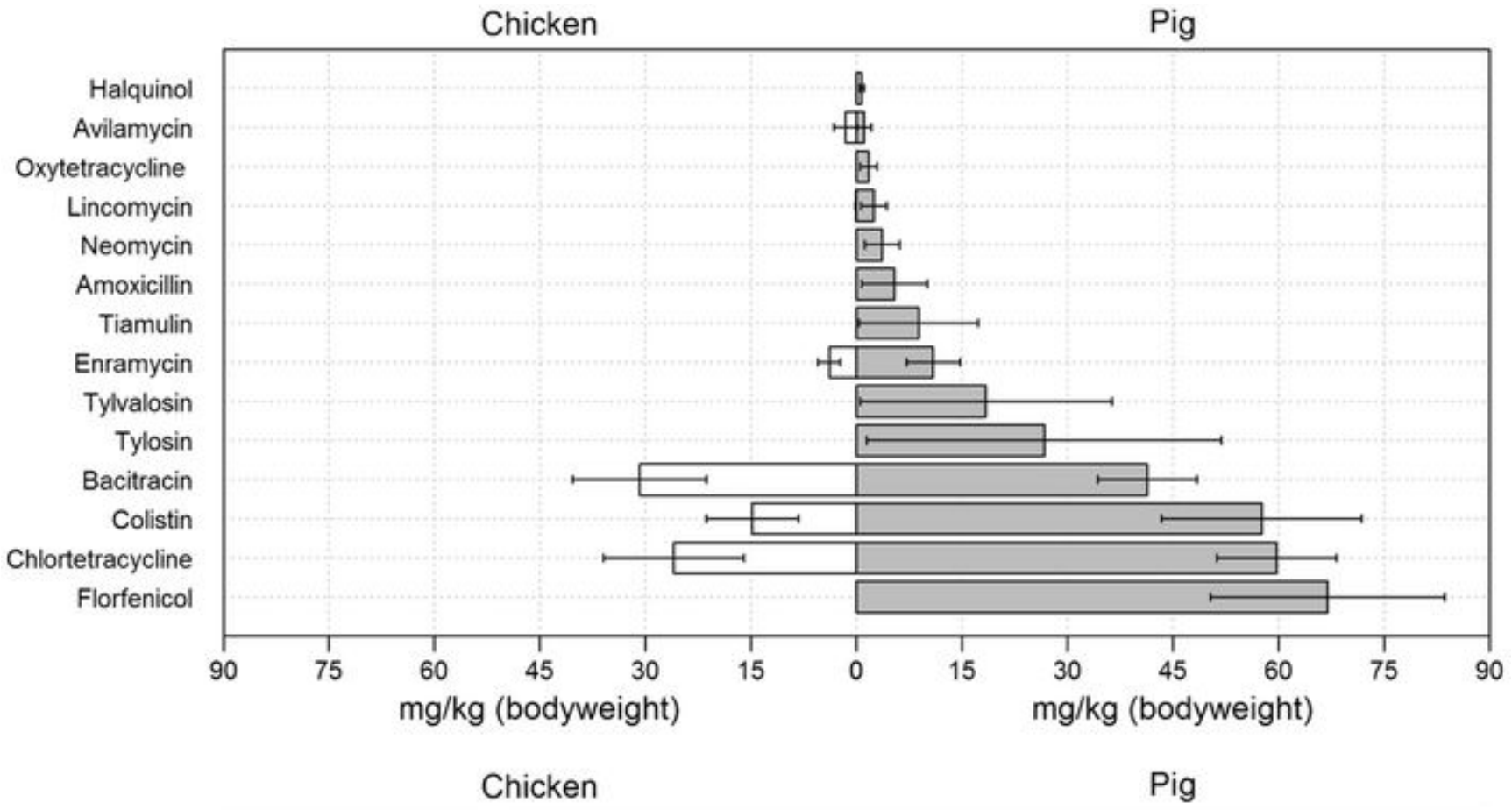
Antimicrobial usage per kilogram of live animal raised

	Pigs	*Chickens*
Administered by farmer	46 mg	52 - 276 mg
Included in feed	287 mg	77 mg
Total	333 mg	129 - 353 mg

Research Programme on Biological Resource Management for Sustainable Agricultural Systems, the Netherlands Organization for Health Research and Development (ZonMW) and the Dutch Ministry of Economic Affairs, whose financial support

Men T. Nguyen[3], Hieu Q. Thai[3], Mai H. Ho[3], Guy Thwaites[1,4], Hoa T. Ngo[1,4], Stephen Baker[1,4] and Juan Carrique-Mas[1,4]

Estimated consumption of antimicrobials in feed in Vietnam



Cuong et al. (2016). ECOHEALTH, 13(3):490-498

Legal framework and legislative initiatives

Legislation of AMR in animal production in Vietnam

- Veterinary Law (2015)
- Compulsory Register of all veterinary products authorized in terrestrial and aquatic animals (~6,000 are antimicrobials)
- List of banned products, annually updated
- June 2015: Signature of an Aide Memoire on AMR by MoH, MoA and FAO, USAID, JICA, OUCRU

National Action Plan to control AMU and AMR

- Developed by MoA with the support from FAO
  - Aligned with FAO Action Plan for AMR (2016-2020)
- 4 areas of activity:
  1) Strengthen policy and governance
  2) Improve awareness on AMR in the agriculture community
  3) Regulate AMU and implement good practices
  4) Develop capacity for surveillance of AMU/AMR

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ViParc

Vietnamese Platform for Antimicrobial Reduction in Chicken production

www.viparc.org

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CỤC THÚ Y — DEPARTMENT OF ANIMAL HEALTH

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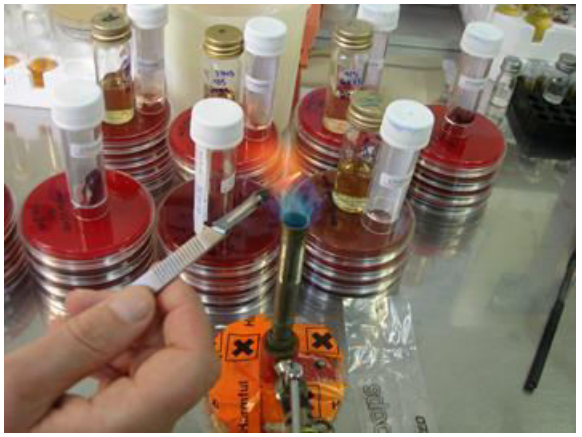
Research aims of ViParc

- To reduce 33-50% antimicrobial usage among chicken farmers by providing farmers with a locally-adapted farm veterinary support system

- To elucidate the relationship between antimicrobial usage, farming practices and antimicrobial resistance

ViParc
Vietnamese Platform for Antimicrobial Reduction in Chicken production



Randomised before-and-after controlled trial

Random selection of farms ≥ 50 chickens

Exclusion criteria:
- Raise < 50 chickens
- Raise chickens <50% time
- Raise only layer chickens

Final selection of study farms (n=120)

Phase I: Baseline phase (12 months)

Randomisation

Arm I (n=40)
- Farmer Training and Health Plan
- Normal (including medicated) feed

Arm II (n=40)
- Farmer Training and Health Plan
- Non-medicated feed

Arm III (n=40)
- Control (no change)

Phase II: Intervention phase (18 months)

Dong Thap province, Mekong Delta

Trial outcomes (endpoints)

(I) Antimicrobial usage

(II) Antimicrobial resistance

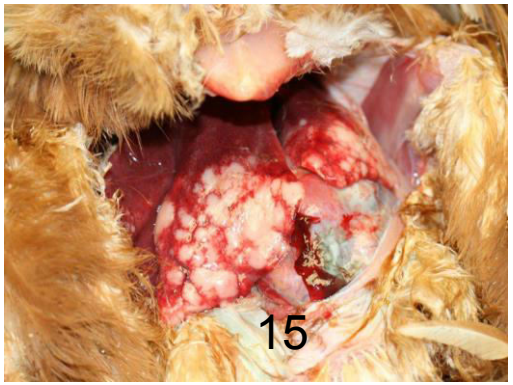
(III) Antimicrobial residues in chicken meat

Sampling and data collection

	[1] Day-olds arrive from hatchery	[2] Mid production	[3] End of production
Chicken faecal samples			
Additional samples		-	
			
High quality data collection	✓	✓	✓

Intervention phase

- 18 months

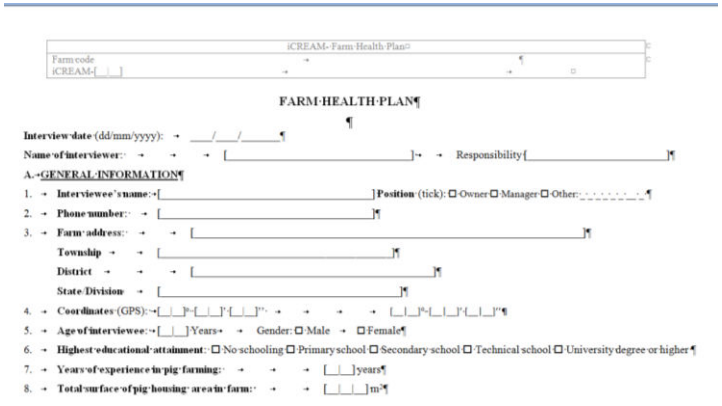


Farmer training programme (FTP)

I. Good farming practices and record keeping
II. Prevention and control of diseases in chickens
III. Waste management and environmentally-sustainable practices

Farm Health Plan (FHP)

- Each farm in Arms I & II to be assigned to a Project Veterinarian (PV)
- Visits to advice and audit the farm and on nutrition, productivity, disease control (vaccination, biosecurity, C&D and rodent control, etc.)
- Farms in Arm II to be supplemented with antimicrobial replacements (competitive exclusion, enzymes, probiotics, etc.)



iCREAM-Farm Health Plan

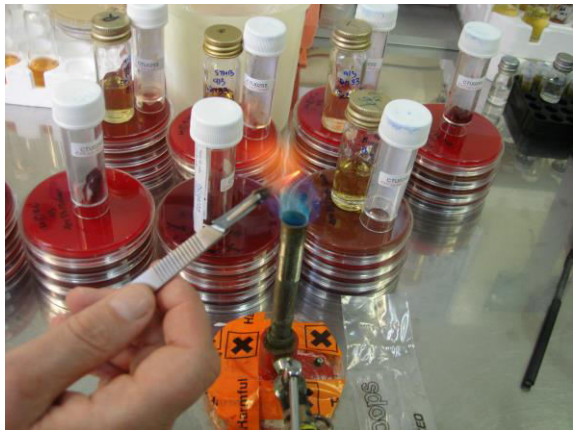
Farm code
iCREAM-[ ]

FARM HEALTH PLAN

Interview date (dd/mm/yyyy): ___/___/_____
Name of interviewer: [ ] Responsibility [ ]
A. GENERAL INFORMATION
1. Interviewee's name: [ ] Position (tick): ☐ Owner ☐ Manager ☐ Other: _____
2. Phone number: [ ]
3. Farm address: [ ]
Township [ ]
District [ ]
State/Division [ ]
4. Coordinates (GPS): [ ]°[ ]'[ ]"; [ ]°[ ]'[ ]"
5. Age of interviewee: [ ] Years Gender: ☐ Male ☐ Female
6. Highest educational attainment: ☐ No schooling ☐ Primary school ☐ Secondary school ☐ Technical school ☐ University degree or higher
7. Years of experience in pig farming: [ ] years
8. Total surface of pig housing area in farm: [ ] m²

Diagnostic support

- **PVs will carry out diagnostic investigations of disease in their assigned farms:**
  - Diagnostic necropsy
  - Bacterial diagnostics and AMR (SDAH-DT); viral diagnostics (UCT)
- **PVs will provide results to the farmer and liaise with the pharmacist and will recommend optimal treatment**



Cost-benefit analyses

Costs of the intervention	*Benefits of the intervention*
• Costs of farmer training, veterinary advice support	• Savings in antimicrobials
• Costs of diagnostic support (advisory visits, laboratory, tests)	• Increased productivity (less disease, better output)
• Upgrade of farming practices as a result of the advice	
• Antimicrobial replacements	• Reductions in AMR

Conditioning factors

- 'Take up' of the intervention by the farmer (compliance with FTHP, diagnostic requests)
- Changes in GoV policy, market fluctuations

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Thank you very much!

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