



# Antimicrobial Resistance Hub

## Accessibility of antibiotics in low- income countries

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# CGIAR AMR Hub

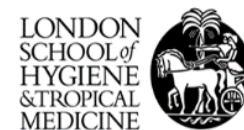
mitigating agricultural associated AMR risks

## ILRI

INTERNATIONAL  
LIVESTOCK RESEARCH  
INSTITUTE

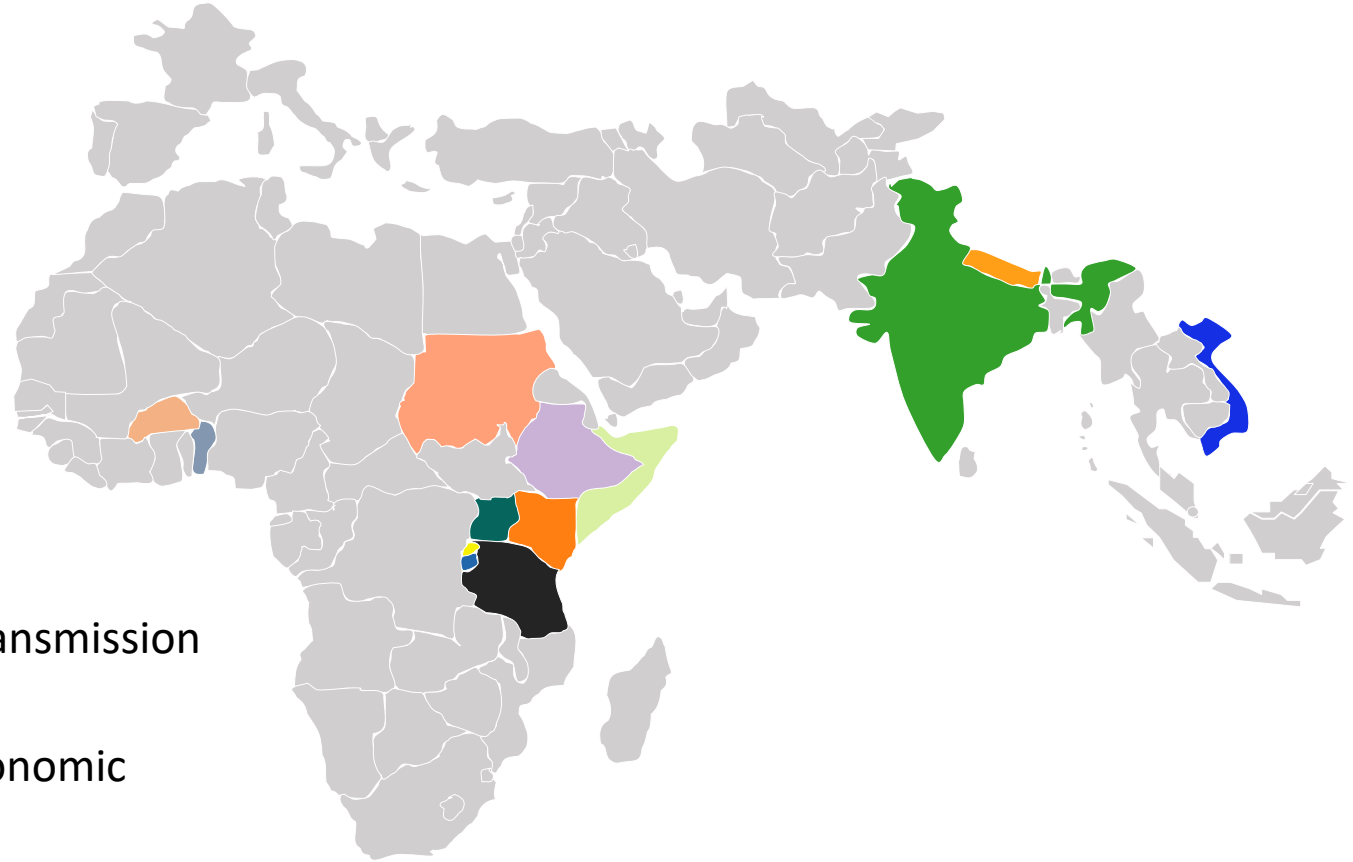


INTERNATIONAL CENTRE FOR  
**ANTIMICROBIAL RESISTANCE**  
SOLUTIONS



National partners  
e.g. MAAIF in  
Uganda

# Global Project Activities



- AMU, drivers, KAP
- AMR Prevalence & Transmission (interfaces)
- Interventions incl. economic impact
- Cap. Building (lab capability and mentorship)

## Other AMR projects

- AMU and AMR in crop production
- Fate and transport in water bodies
- AMR in wildlife and bushmeat

# How do farmers access antibiotics?

- Why do farmers use antibiotics?
  - Therapeutic vs. Non-therapeutic (Prophylaxis, Metaphylaxis, Growth promotion)
- Factors affecting availability of antibiotics within a country
- Who makes the diagnosis and determines treatment?
  - Veterinary surgeons
  - Veterinary para-professionals (need to be supervised by a vet. surgeon)
  - Extension officers (training and assistance to farmers)
  - Farmer's influence and economy
  - Knowledge, attitudes and practices
- Where can farmers buy antibiotics?
- Who ultimately administers antibiotics?

# Antibiotic supply chain

- Antibiotics are typically imported by a national procurement agency, private, NGOs
  - dependent on global availability
  - local import regulations (very complex -> shortcuts)
- Within country: regional differences impacts availability e.g. rural vs. urban
- Price influences availability
- Illegal entry of drugs including smuggled products

# Quality of antibiotics

- WHO noted 17% of antibiotics in LMICs are substandard or counterfeit
  - Complex regulations, poor communication between governing bodies, weak enforcement, corruption → infiltration of poor quality drugs
  - Manufacturers produce lower quality products for less regulated markets
  - insufficient capacity to assess drug quality
- Lack of proper transportation, storage and enforcement of regulation → affects drug quality, e.g. no cold storage
- Complex distribution chain → no infrastructure to do recalls
- No compensation of retailers for expired drugs
  - continued sales

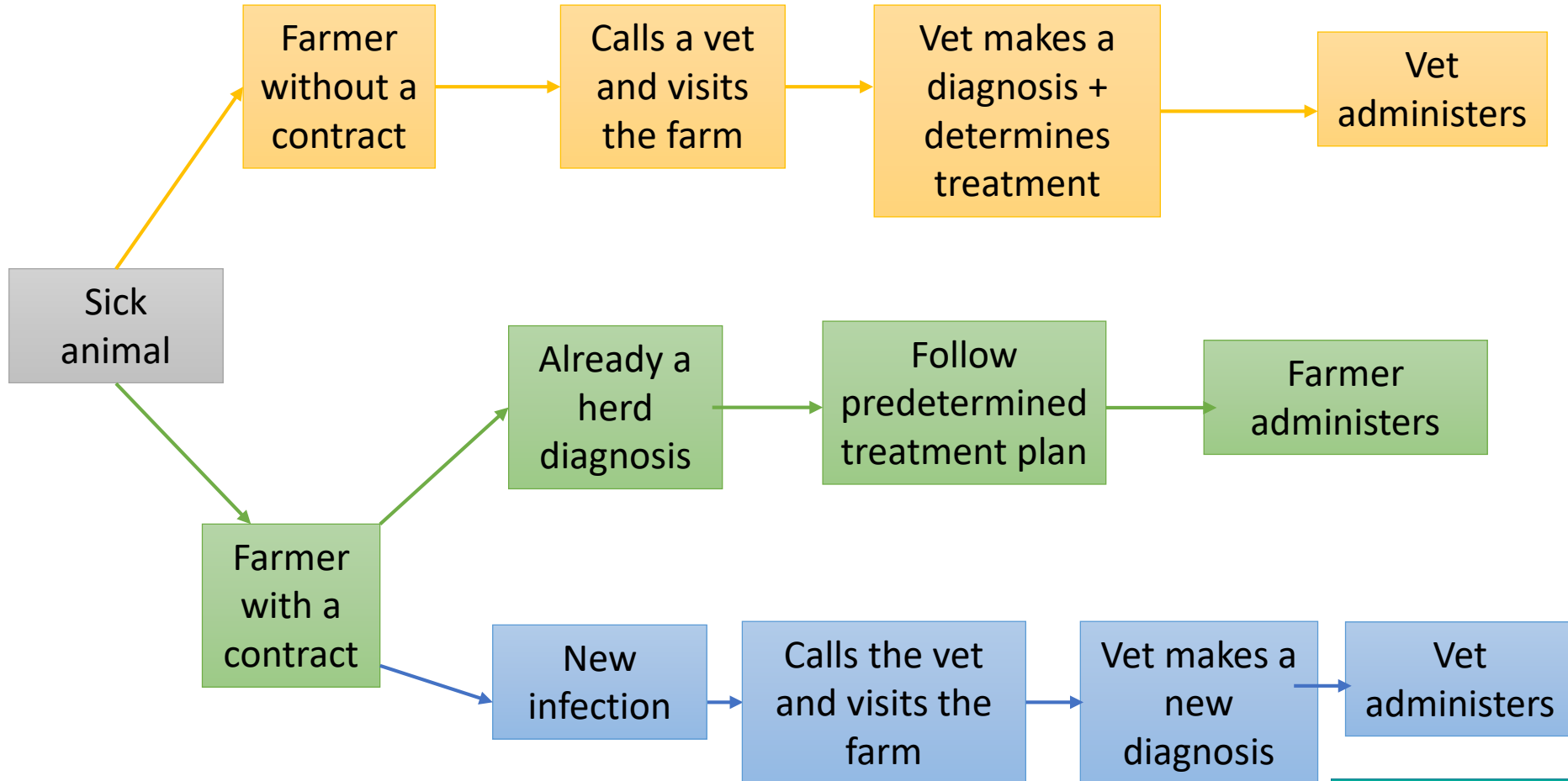
# How are farms animals treated?

- Two scenarios



# What happens if an animal is sick?

## *Danish model*







# Where do farmers buy their antibiotics?

- Formal sector: Regulated by policies
  - Pharmacy – typically sell human drugs
  - Drug store – typically sell vet drugs
  - Agrovet – one stop agricultural shop
  - Animal health practitioners (Vets/EO)
- Informal sector: Unregulated
  - Local kiosk/store-Human & vet drugs
  - Open markets – Human and vet drugs
  - Pharmaceutical reps visiting farms
  - Other farmers
  - Unqualified practitioners



# Acknowledgements

## Key individuals:

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RESEARCH  
PROGRAM ON  
Agriculture for  
Nutrition  
and Health



RESEARCH  
PROGRAM ON  
Livestock



The  
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Boosting Uganda's  
Investment in Livestock  
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