

Policy and practice: developing countries and livestock drug use

3rd international conference on

Responsible Use of Antibiotics in Animals

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ILRI
INTERNATIONAL
LIVESTOCK RESEARCH
INSTITUTE



Key messages

1

FOOD & LIVELIHOODS

Smallholder livestock systems contribute now and in the future



2

ANIMAL HEALTH & DISEASE

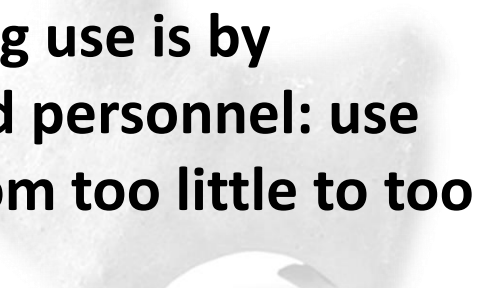
Disease burdens in poor countries are very high



3

DRUG USE

Most drug use is by untrained personnel: use varies from too little to too much



4

RESPONSES

Controlling disease; community animal health; rational drug use



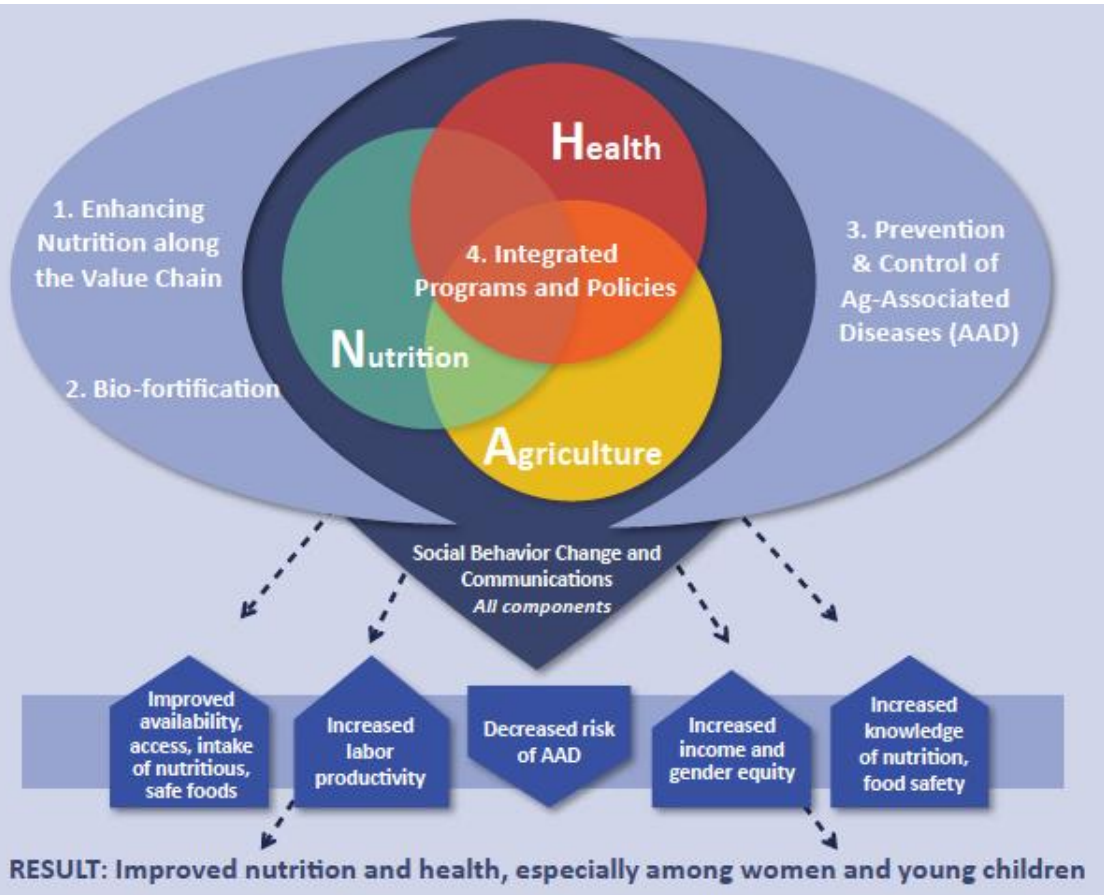
✓ CGIAR: CGIAR 15 centres (IRRI, CIAT, IWMI...)

✓ ILRI: International Livestock Research Institute

- Staff: 700.
- Budget: \$70 million.
- 30+ scientific disciplines.
- 120 senior scientists from 39 countries.
- 56% of internationally recruited staff are from developing countries.
- 34% of internationally recruited staff are women.
- Large campuses in Kenya and Ethiopia.
- 70% of research in sub-Saharan Africa.



CGIAR Research Program Agriculture for Nutrition and Health (A4NH)



3 flagships on human nutrition

1 flagship on prevention and control of agriculture associated diseases

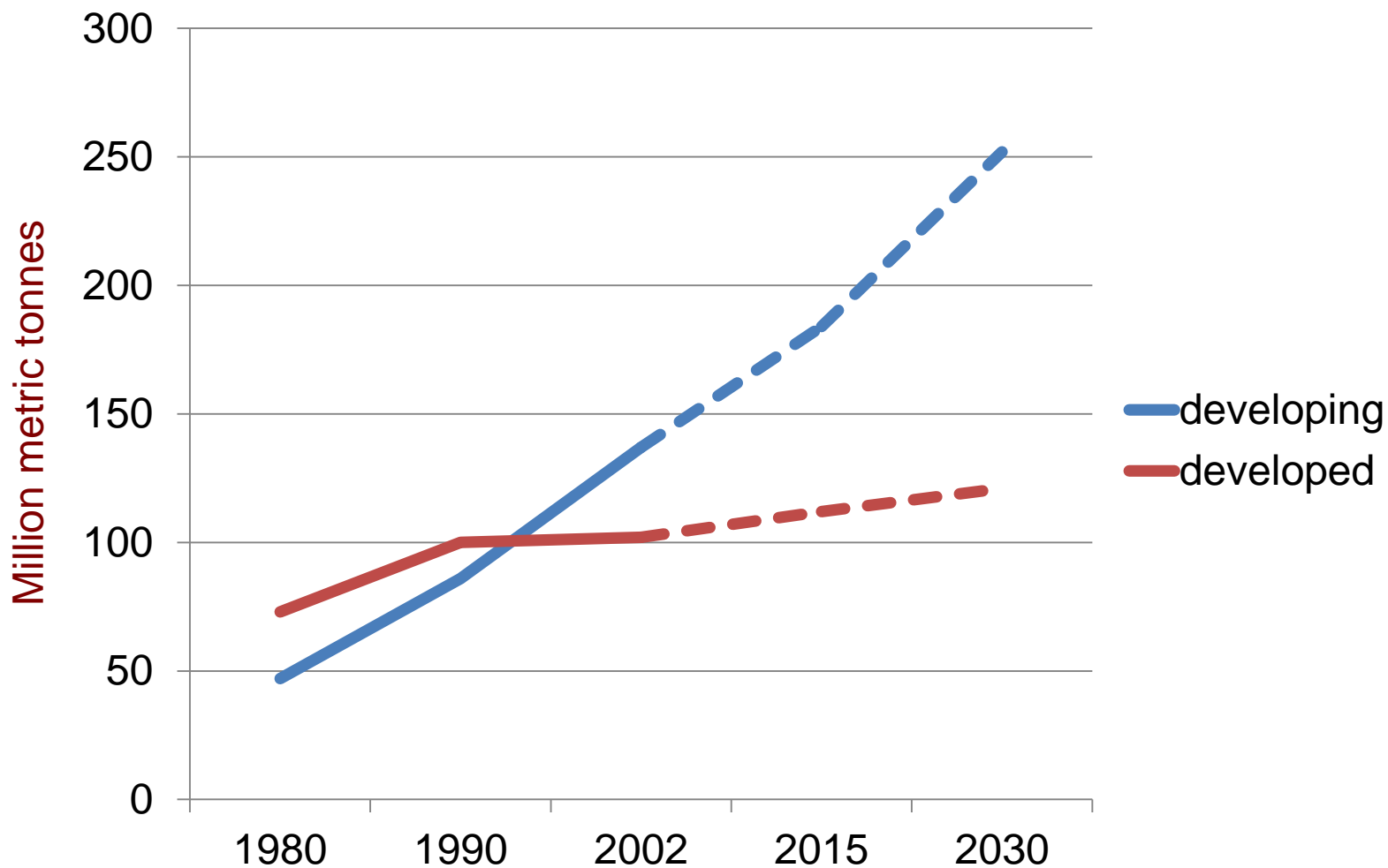
- Food safety
- Zoonoses
- Emerging diseases

aghealth.wordpress.com/
<http://www.a4nh.cgiar.org>

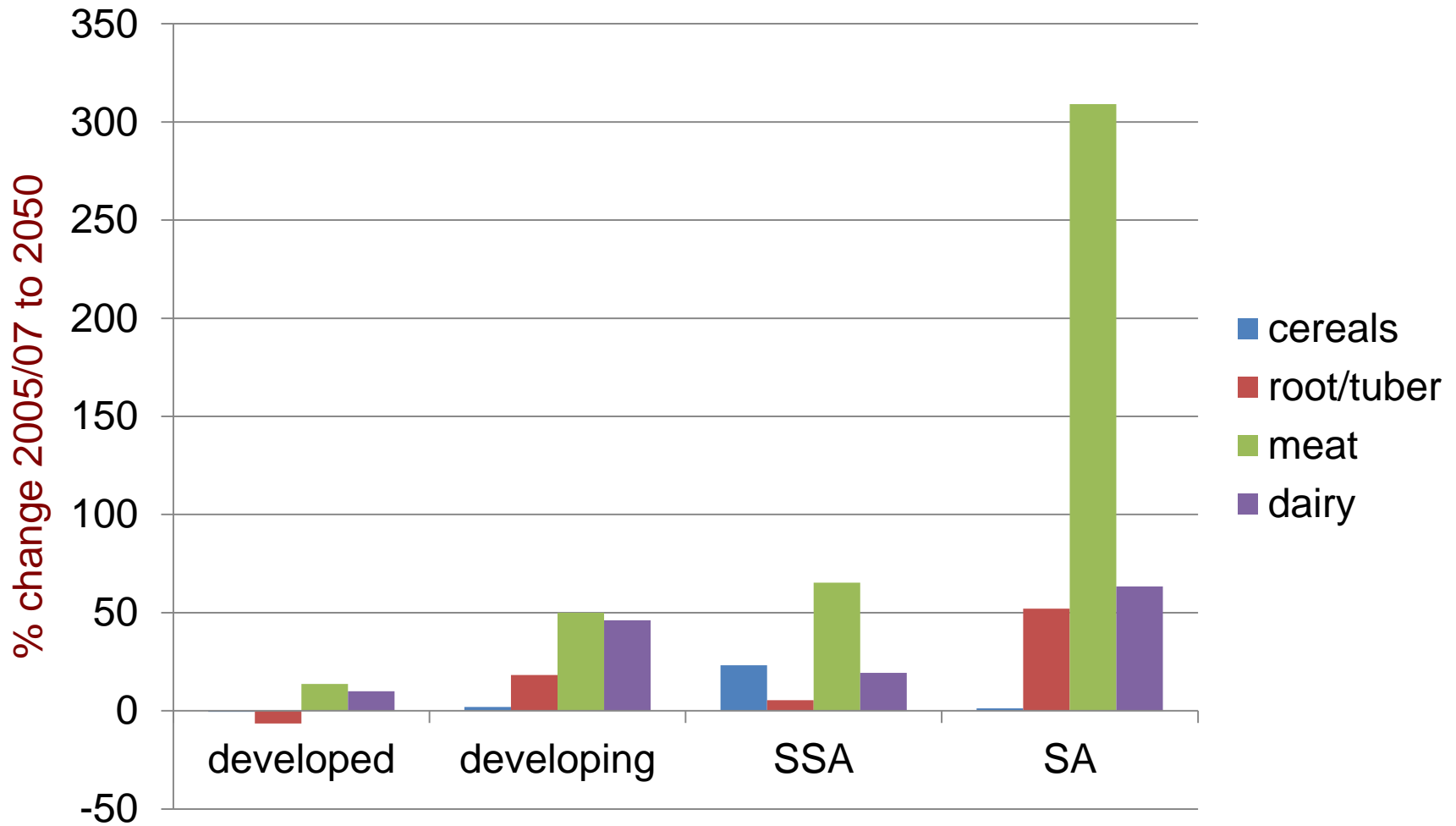
Food & livelihoods



Gains in meat consumption in developing countries are outpacing those of developed



Change in global and regional demand for food: Livestock and other commodities



Smallholder livestock keepers are competitive

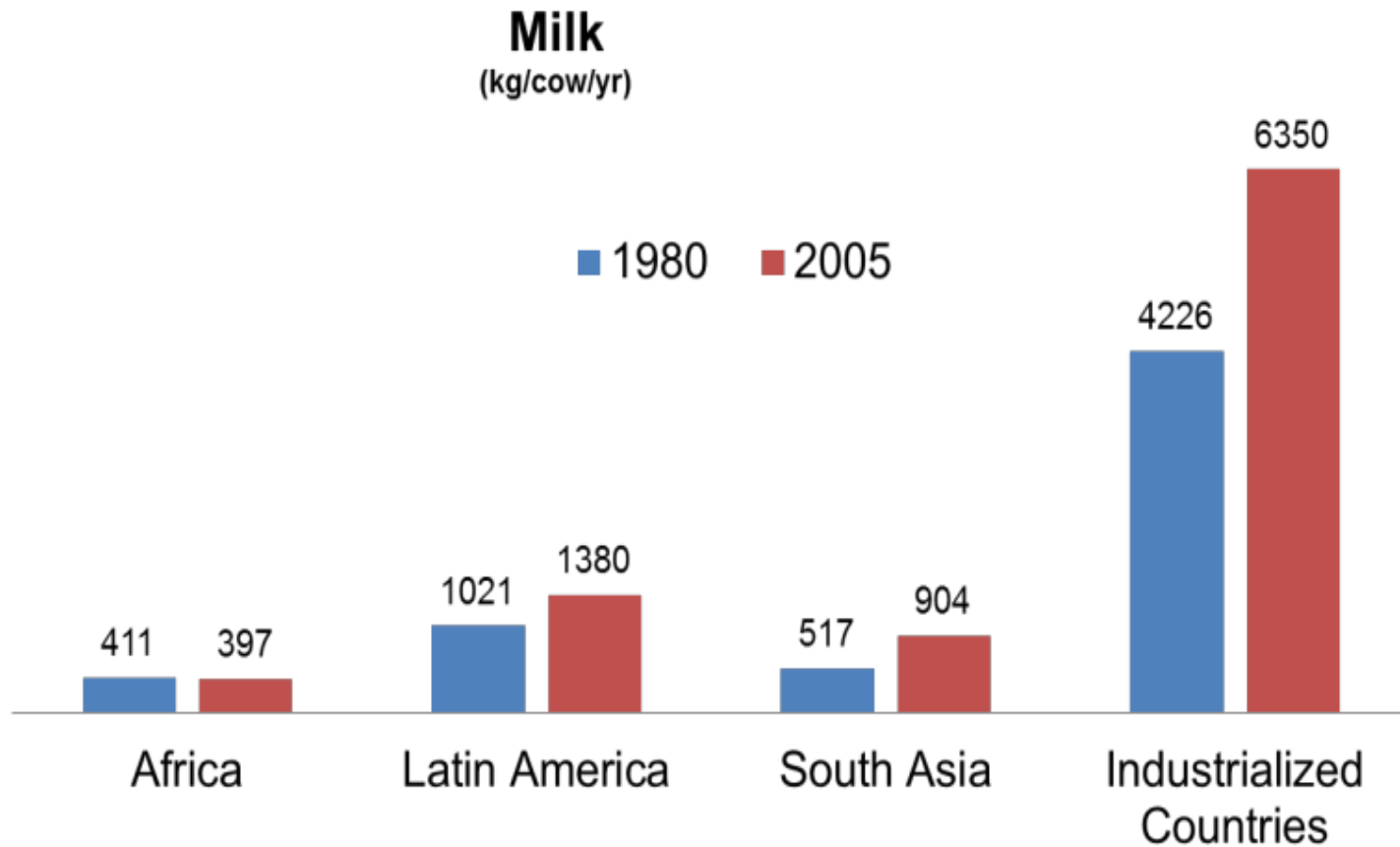
East African dairy

- 1 million Kenyan smallholders keep Africa's largest dairy herd
- Ugandans are the world's lowest-cost milk producers
- Small- and large-scale Kenyan poultry and dairy producers have same levels of efficiency and profits

Vietnam pig industry

- 95% of production is by producers with less than 100 animals
- Industrial pig production could grow to meet no more than 12% of national supply in the next 10 years
- Smallholders will continue to provide most of the pork

Big productivity gaps, largely due to poor animal health, persist between rich and poor countries

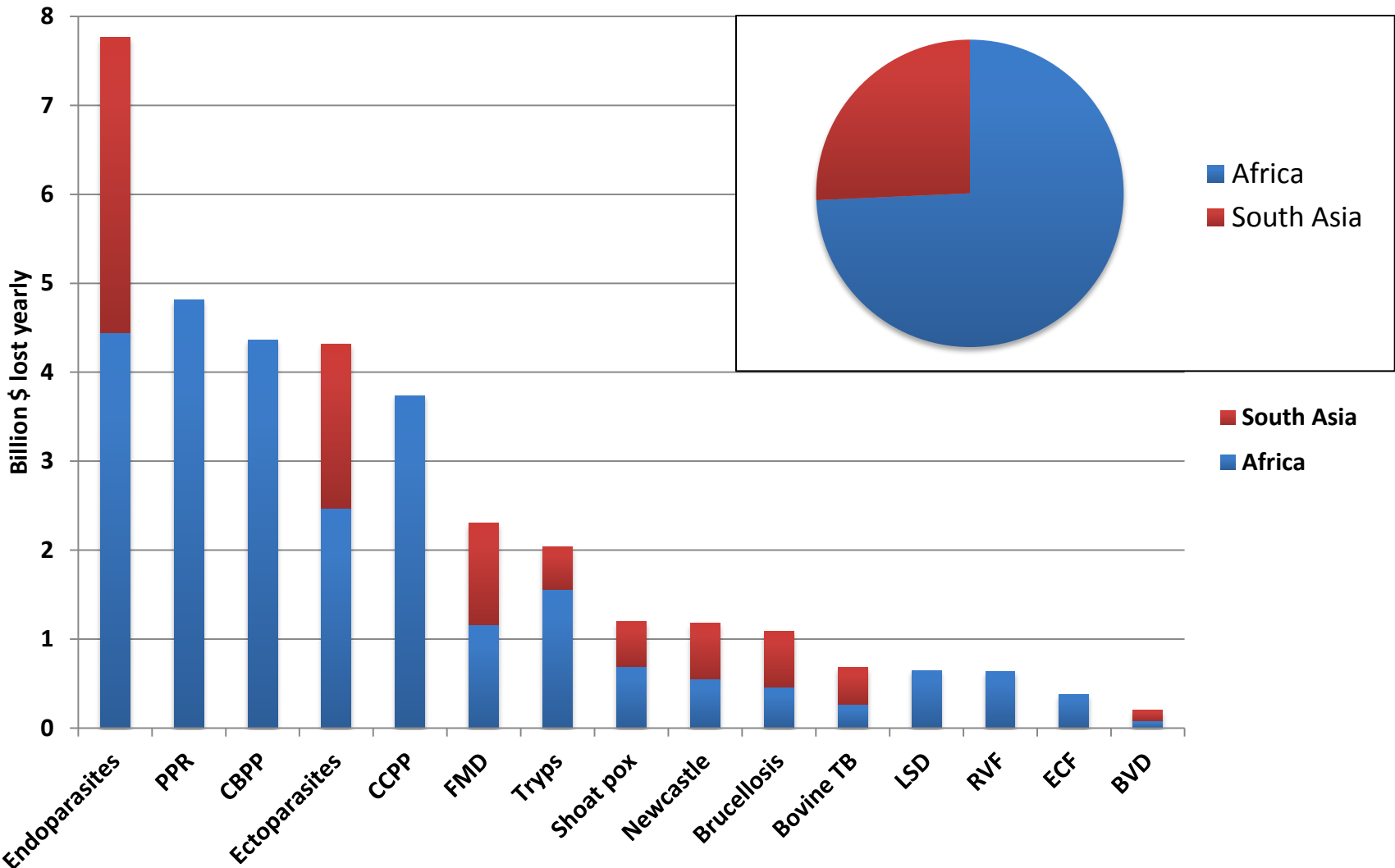


Steinfeld et al. 2006

Animal health & disease



Annual losses from selected diseases – Africa and South Asia



Animal disease is a key constraint in Africa

- Animal disease is a key constraint:
Remove it and animal productivity increases greatly
- As livestock systems intensify in developing countries, diseases may increase



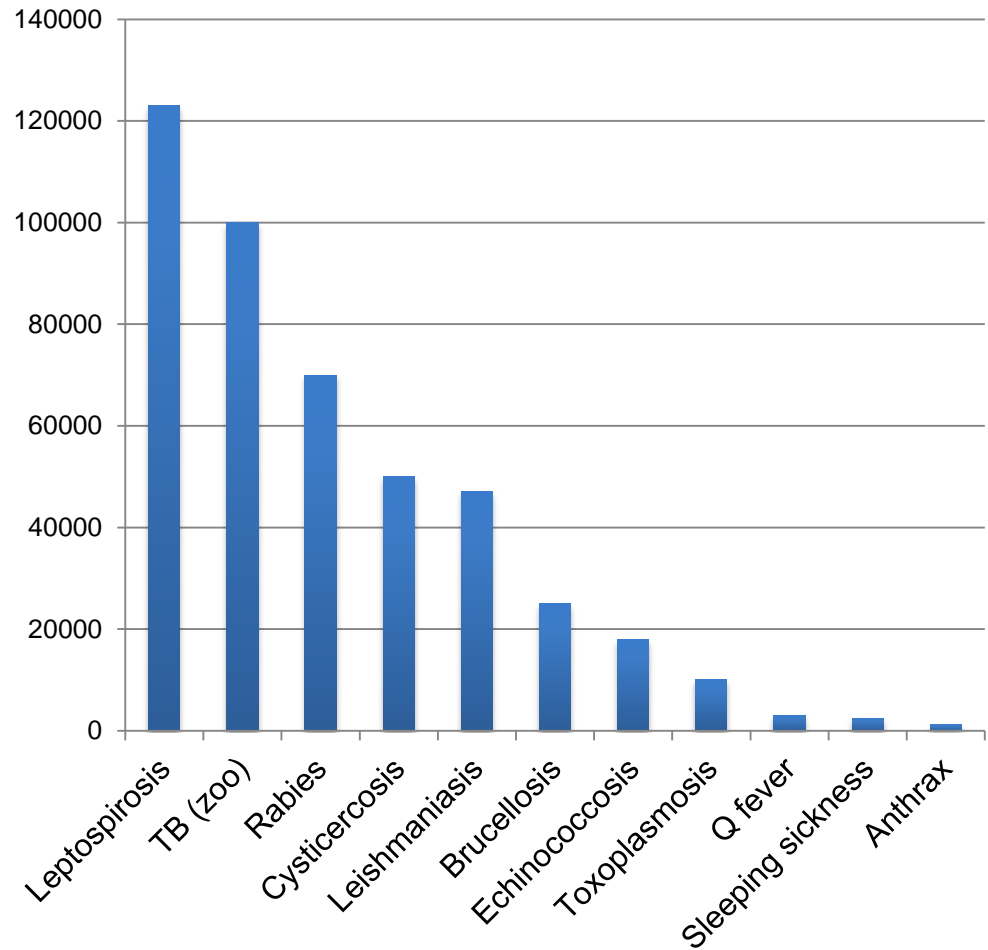
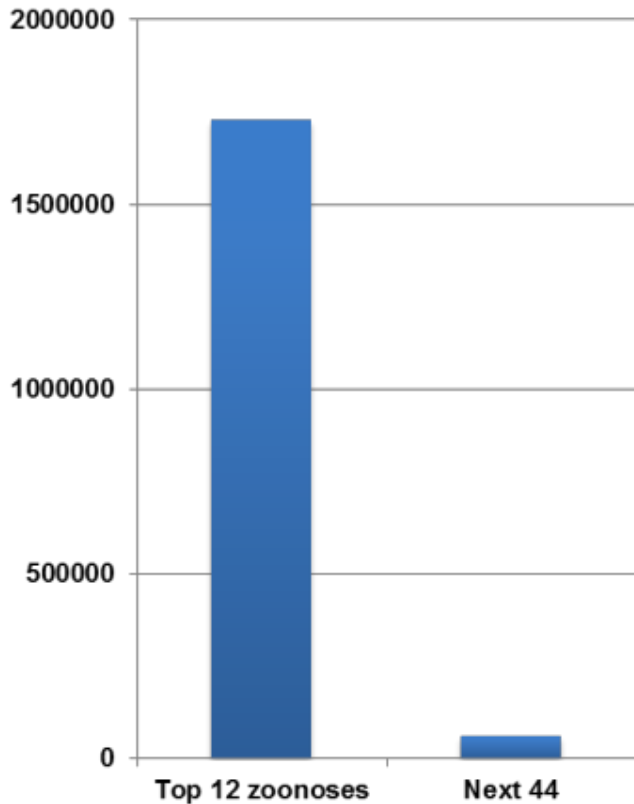
Annual mortality of African livestock
(Around half due to preventable or curable disease)

	Young	Adult
Cattle	22%	6%
Shoat	28%	11%
Poultry	70%	30%

*Otte & Chilonda,
IAEA*

A deadly dozen zoonotic diseases kill 2.2 million people and sicken 2.4 billion each year

Annual deaths



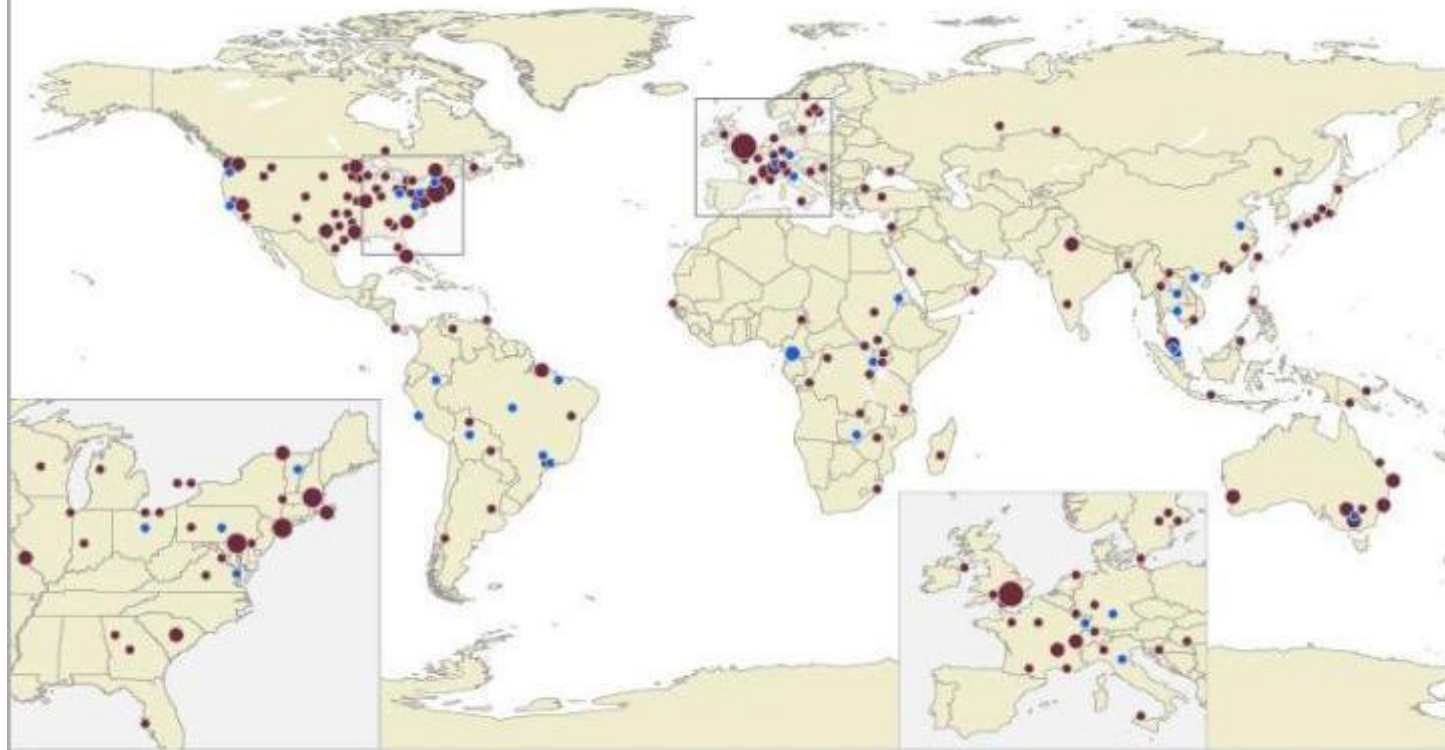
Almost all losses are in developing countries

Emerging zoonotic disease events, 1940–2012

Potential Hotspots in US, Western Europe, Brazil, Southeast Asia

Most emerging human diseases come from animals. This map locates zoonotic events over the past 72 years, with recent events (identified by an ILRI-led study in 2012) in blue. Like earlier analyses, the study shows western Europe and western USA are hotspots; recent events, however, show an increasingly higher representation of developing countries.

- 1 EVENT
- 2-3 EVENTS
- 4-5 EVENTS
- 6 EVENTS
- EVENTS IDENTIFIED IN 2012 (recent emergence)



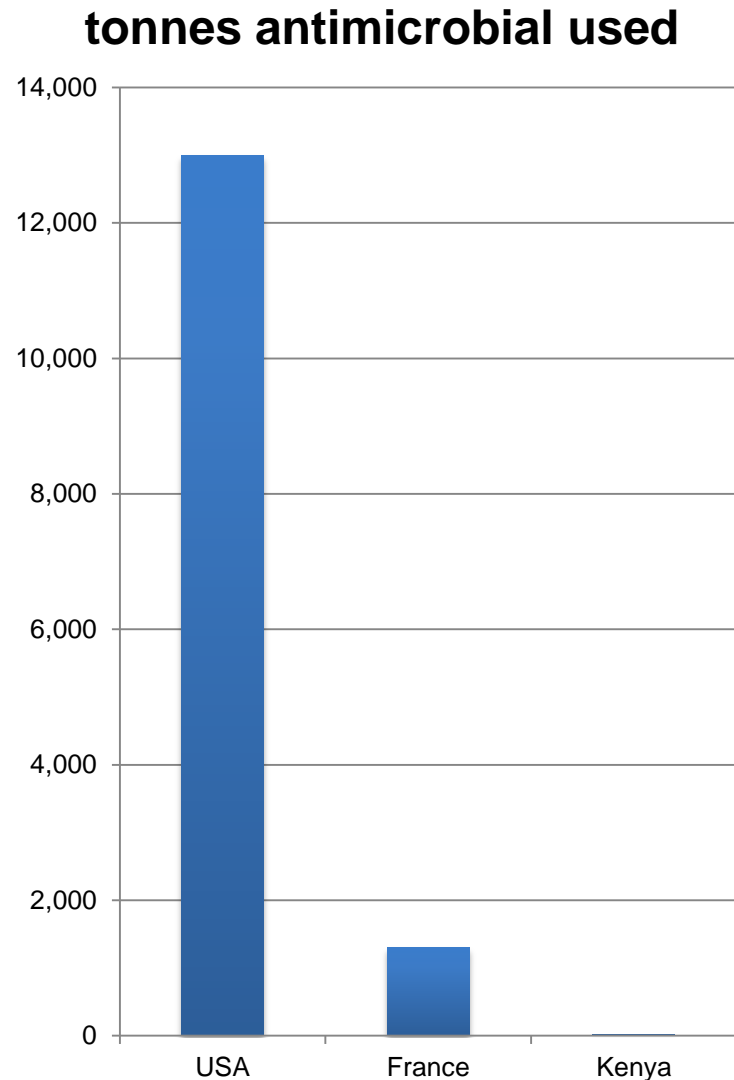
Map by IOZ, published in an ILRI report to DFID: *Mapping of Poverty and Likely Zoonoses Hotspots*, 2012.



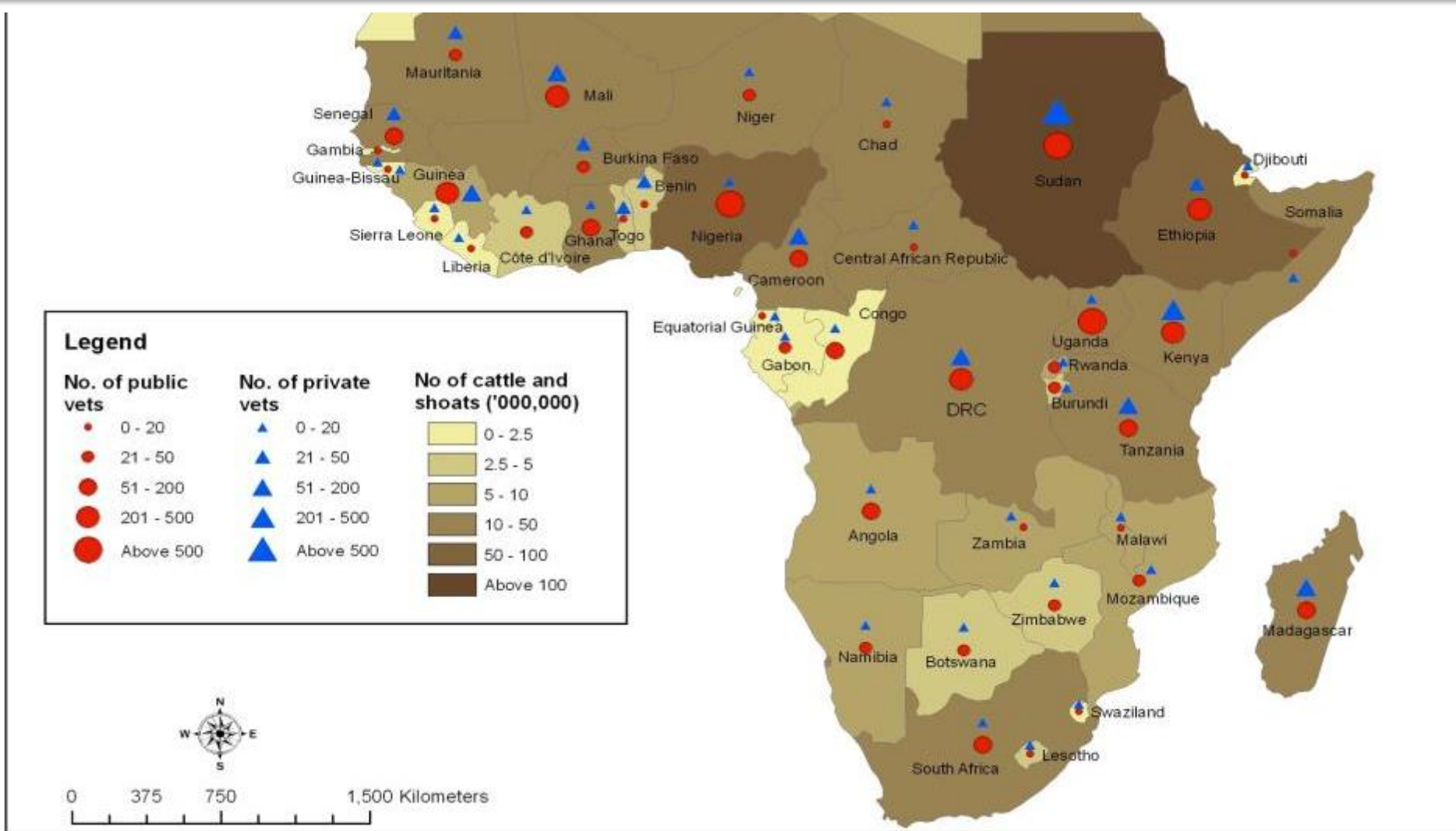
Livestock drug use

Animal health in developing countries: significant and growing markets

- Global *human* health market = **\$1,000 billion**
- Global *animal* health market = **\$20 billion**
- Global *livestock* health market = **\$13 billion**
- Africa and South Asia = **\$0.5 billion**
- 15 countries make up 85% of the livestock market: most not poor



Africa: dozens of vets, tens of millions livestock



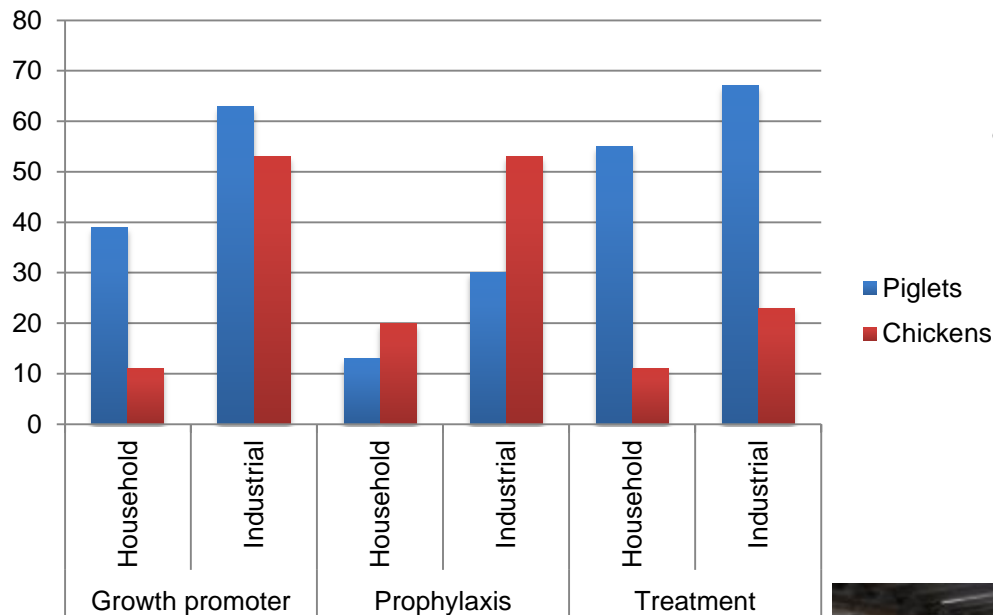
Around 80% of farmers rely on untrained health providers



A district in West Africa

Cattle	70,000
Farmers	25,000
Hawkers selling drugs	50
Market stall selling drugs	15
Public vet	1
Private vet	0

Animal health markets: Vietnam



Human drugs

- In one commune, 75% of children medicated by parents each year

Livestock farmers

- 45 antibiotics from 10 classes
- 100% industrial farmers treat themselves; 60% of household farmers





RESPONSES

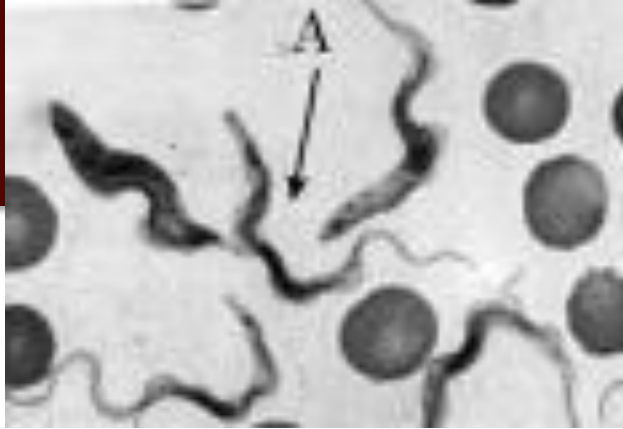
Research 4 development responses

Risk assessment

- Survey residues
- Survey AMR organisms
- Survey drug use
- Examine relations between livestock & human AMR

Risk management

- Disease control
- Disease prevention
 - Vaccines
 - Resistant animals
- Community animal health
- Food quality improvements
- Rational drug use





Ntura ba ani cike misi 2
foroko dennin



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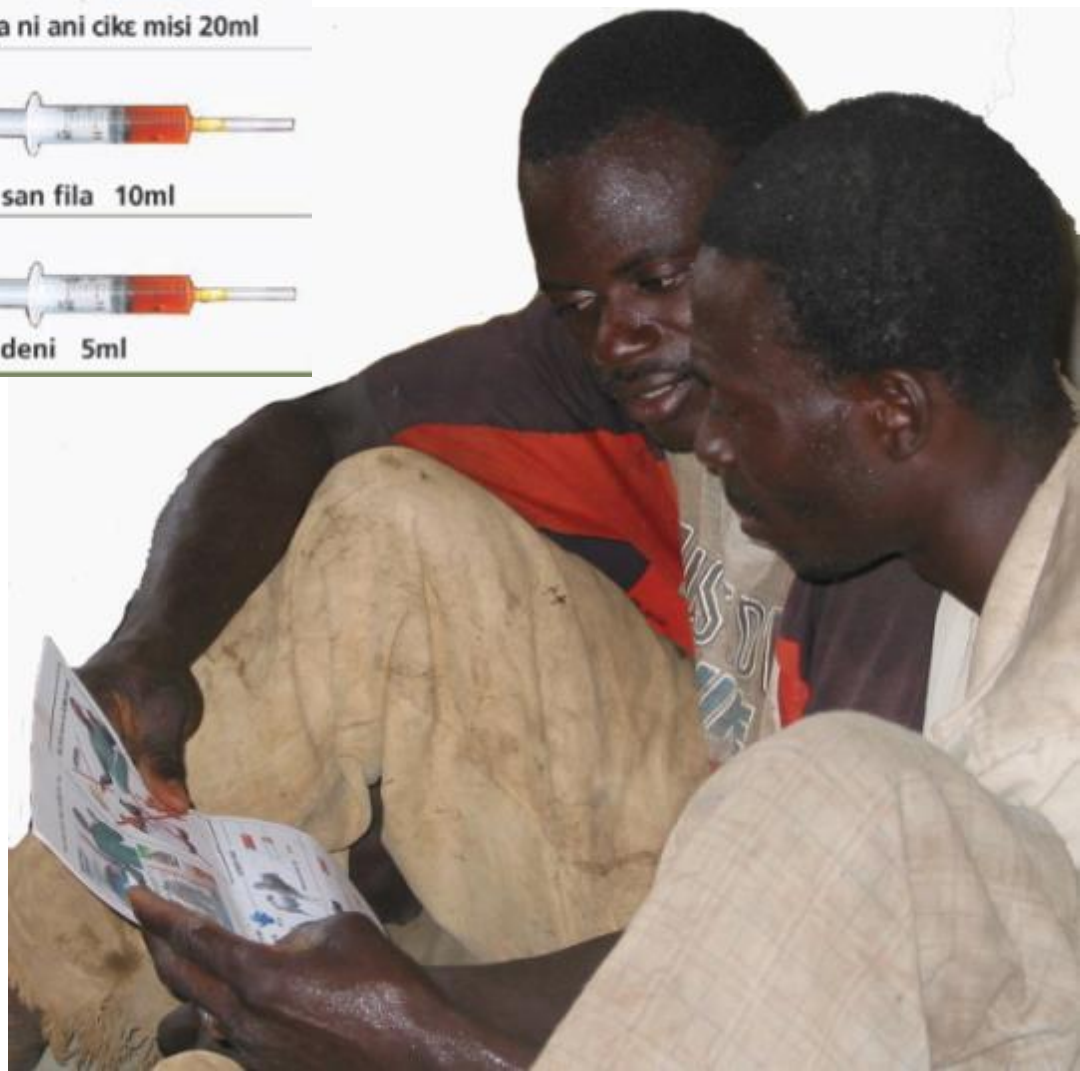
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Results

Improvements in knowledge

Change in practice

- Less under-dosage
- Higher use prophylactics
- No increase in drug use

Better clinical outcomes

- Fewer failures (halved)
- Fewer side affects



More research 4 development responses

- 'One Health' approaches and 'Rational Drug Use' for both people and animals
- Delivery systems for dispersed farmers: CAHW; franchises
- Surveillance systems to detect drug resistance
- Pro-poor packaging / marketing (e.g. smaller packages, thermostable)
- Development of vaccines for Newcastle disease, East Coast fever
- Rapid diagnostics for residues and AMR
- Quality assurance for veterinary medicines



Policy responses

Vietnam

- One health task force
- Situational analysis
- Policy workshops
- Member of regional initiatives
- Compliance international norms (export only)
- National Action plan

Kenya

- One health taskforce
- Global partnerships
- Situational analysis
- Compliance: export only

Key messages

1

FOOD SECURITY

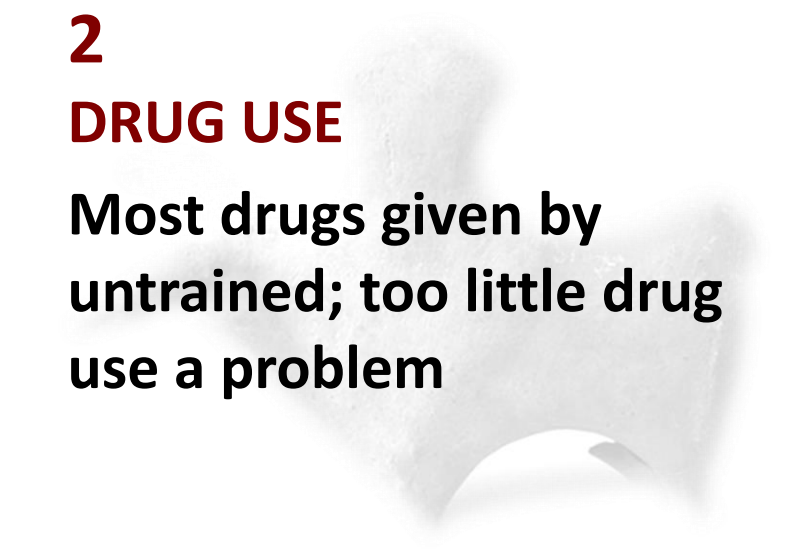
Smallholder livestock
essential



2

DRUG USE

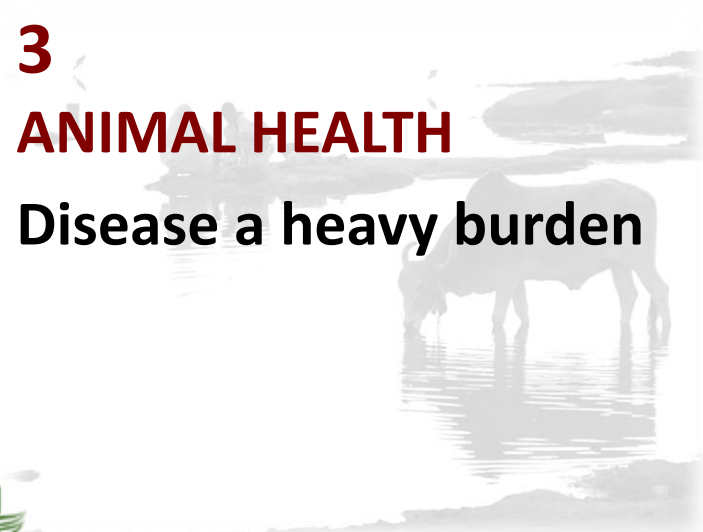
Most drugs given by
untrained; too little drug
use a problem



3

ANIMAL HEALTH

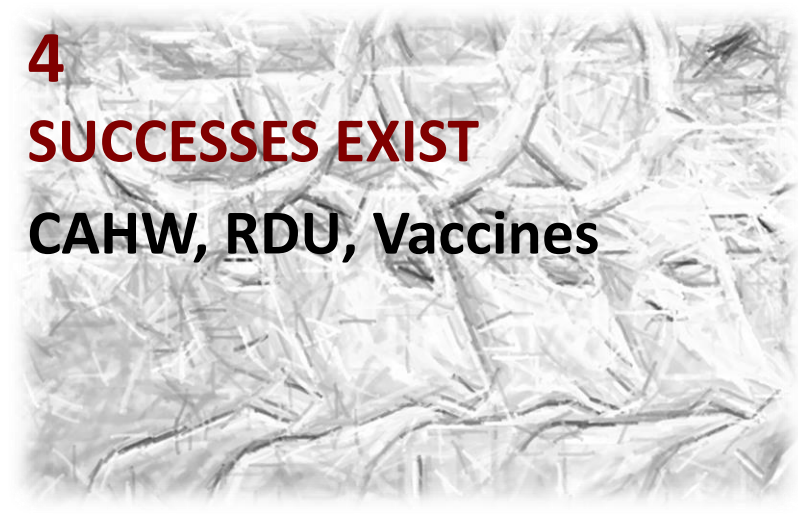
Disease a heavy burden



4

SUCCESSES EXIST

CAHW, RDU, Vaccines



Acknowledgements

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Better lives through livestock

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