

Healthy lives: Tackling food-borne diseases and zoonoses

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ILRI

International Livestock Research Institute

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RESEARCH
PROGRAM ON
Agriculture for
Nutrition
and Health

Led by IFPRI

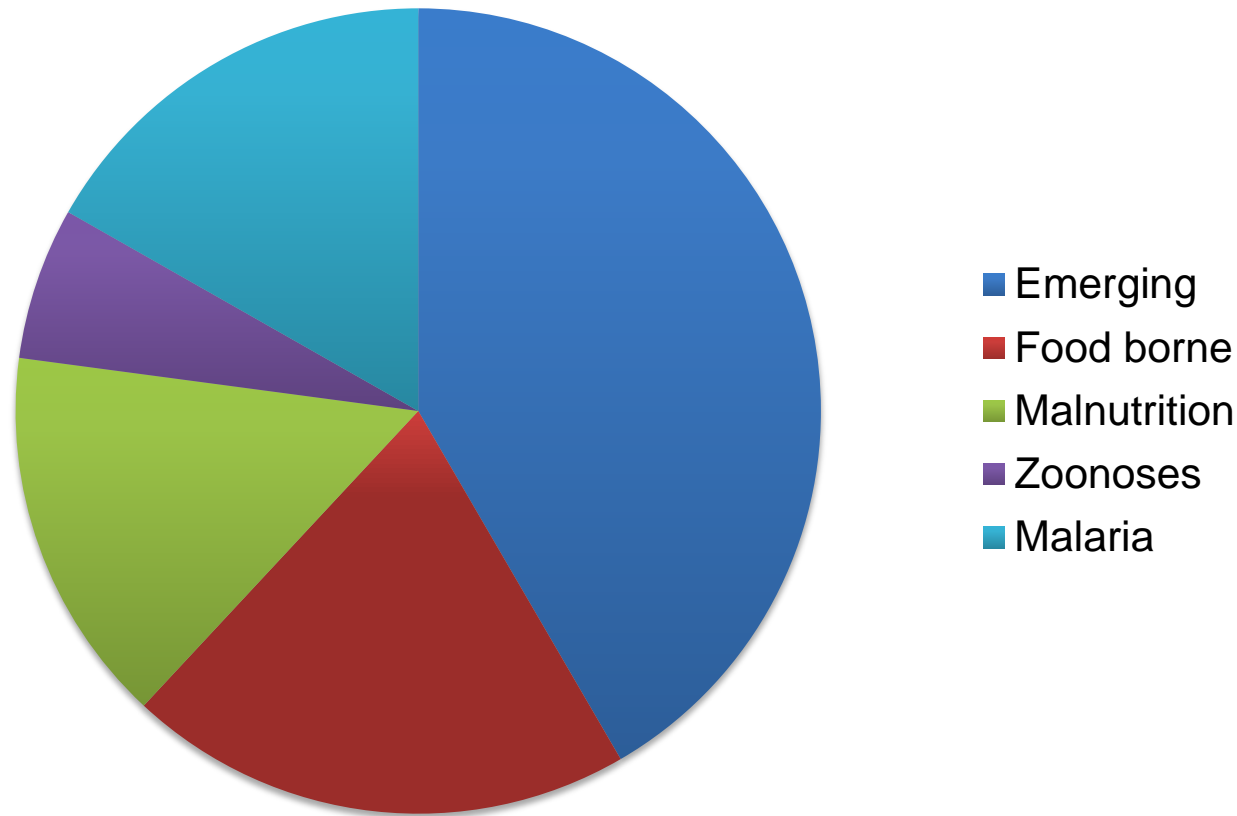
Towards evidence and impact at scale

Agriculture research and human health

- **Evidence**: Mapping, measuring, targeting
- **Technology**: diagnostics, vaccines, decision support
- **Impact**: Safe food in wet markets



Agriculture imposes large burdens on human health



Three million deaths a year are agriculture associated
One quarter of all deaths from infection are agriculture associated
Almost all of these occur in developing countries

Agriculture imposes large burdens on human health

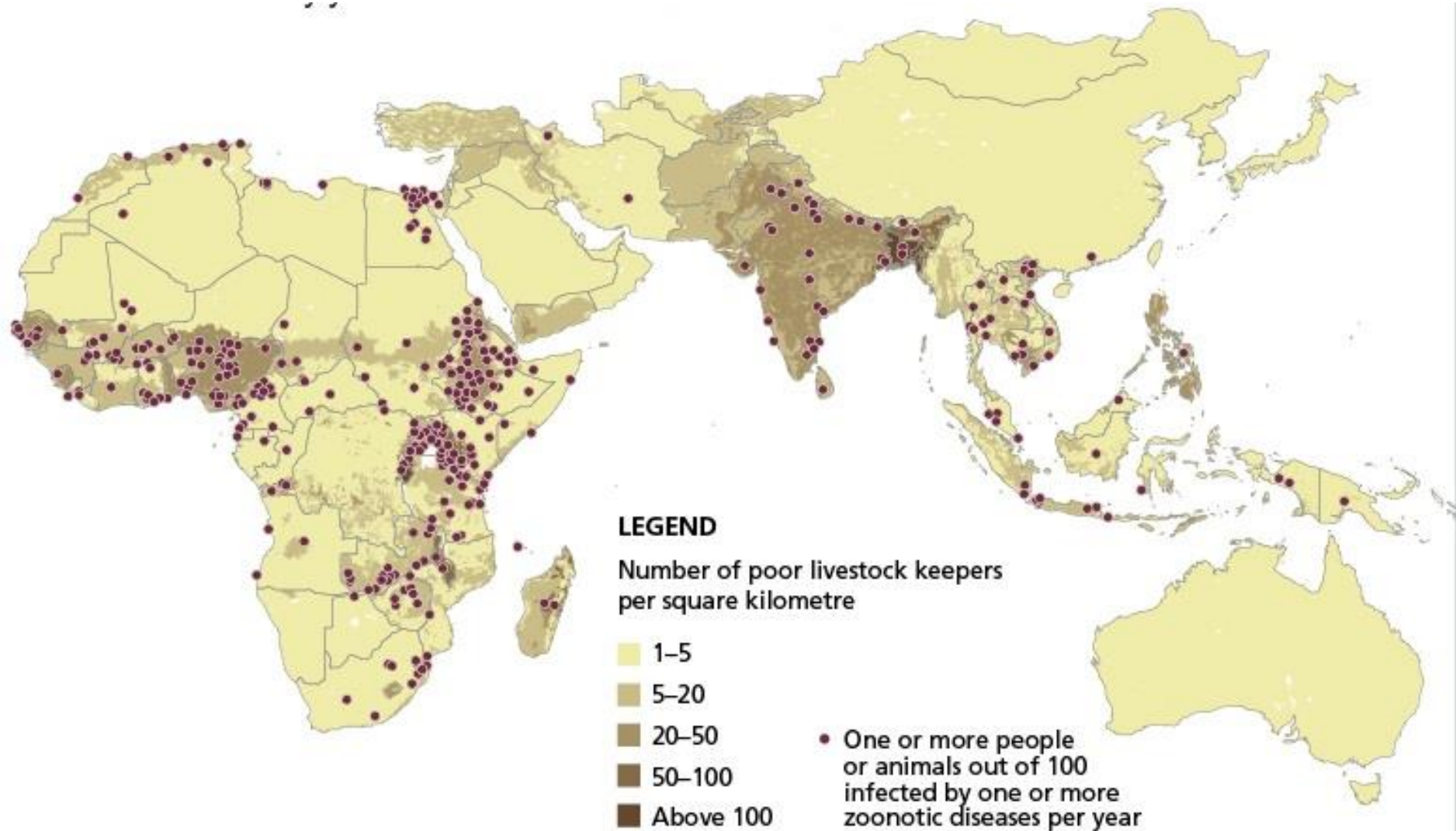
Zoonoses and FBD kill 2.2 million a year

- **2.4 billion people sick**
- **2.2 million people dead**
- **more than 1 in 7 animals affected**

Zoonoses & FBD cost \$84 billion a year

- **\$9 billion in lost productivity**
- **\$25 billion in animal mortality**
- **\$50 billion in human health costs**

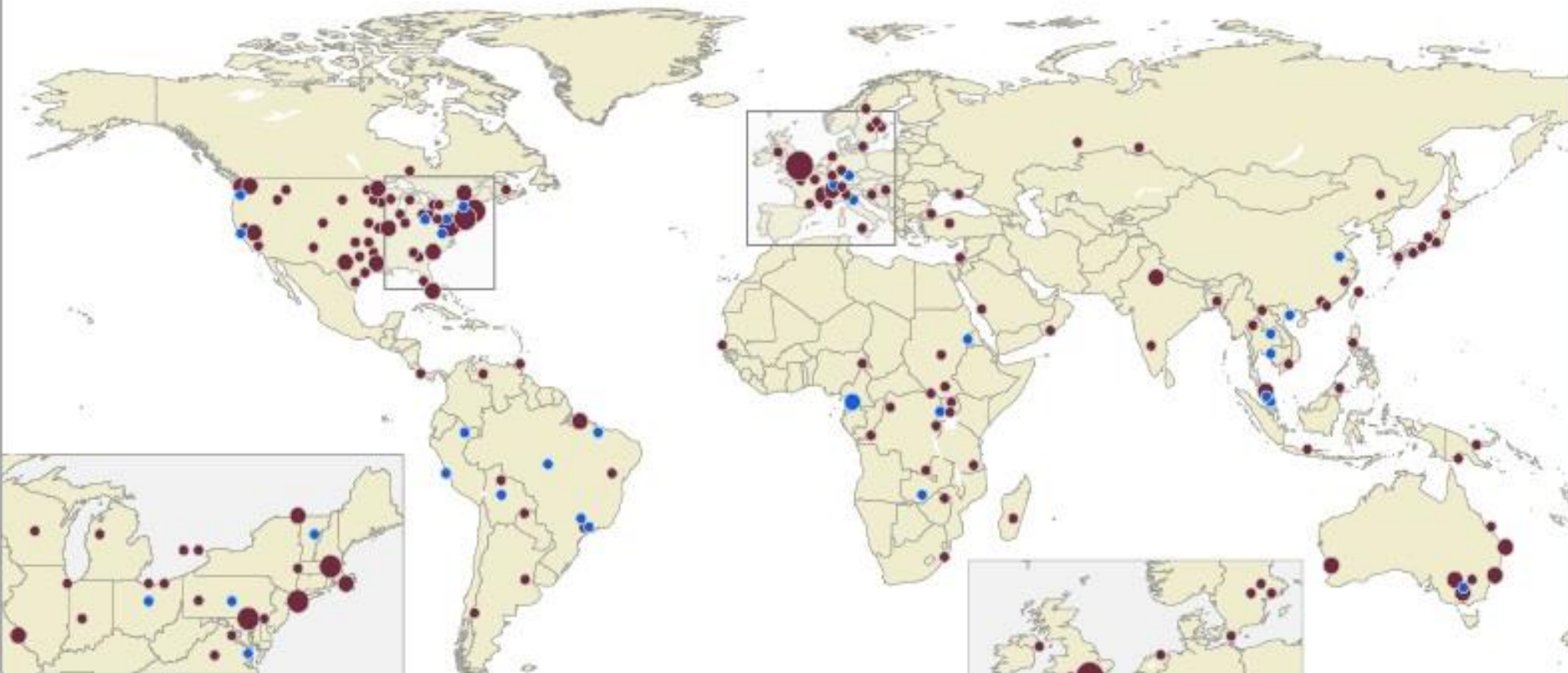
The poor are most affected by zoonoses and FBD



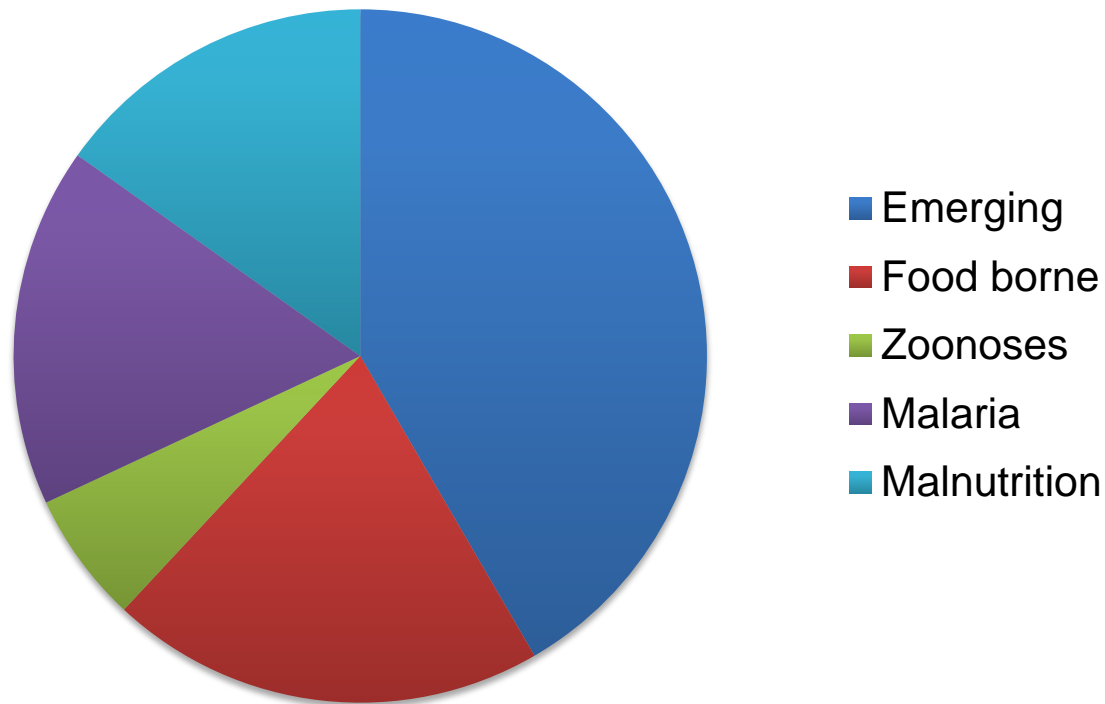
Emerging infectious diseases 1940-2012

Zoonoses make up 75% of EIDs and cost 6.7 billion a year

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



Agricultural solutions work for most agriculture associated diseases



For 70% of ag. associated diseases proven and cost effective agricultural solutions exist

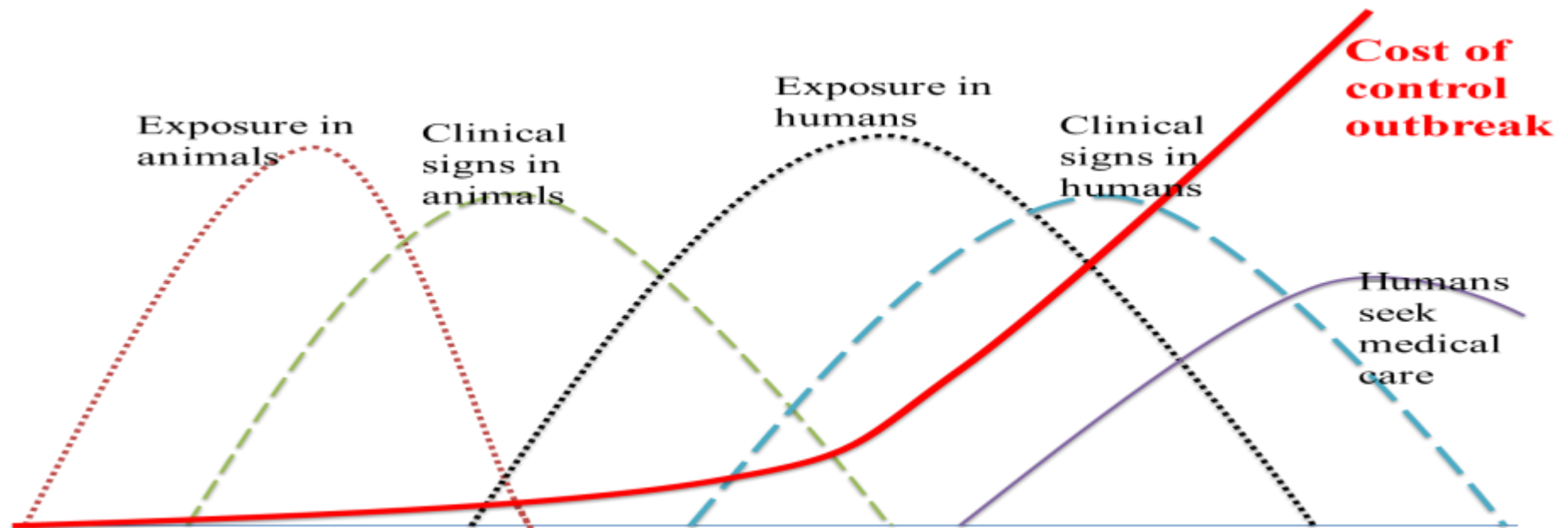
Most zoonoses and food-borne disease require agricultural solutions

- Controlling zoonoses in animal reservoirs (n=13)
 - On average \$6 benefit for \$1 cost

| | |
|-----------------------|--------------------------------|
| Ex ante | 5.0\$ gain for 1\$ cost |
| Ex post | 6.6\$ gain for 1\$ cost |
| Poor countries | 3.7\$ gain for 1\$ cost |
| Rich countries | 7.4\$ gain for 1\$ cost |

Emerging diseases are difficult to prevent but timely responses reduce impacts

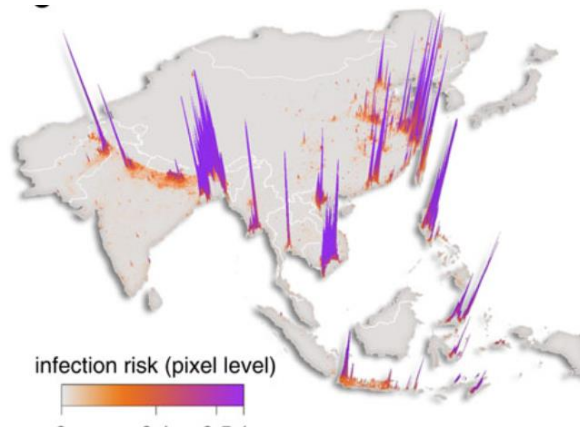
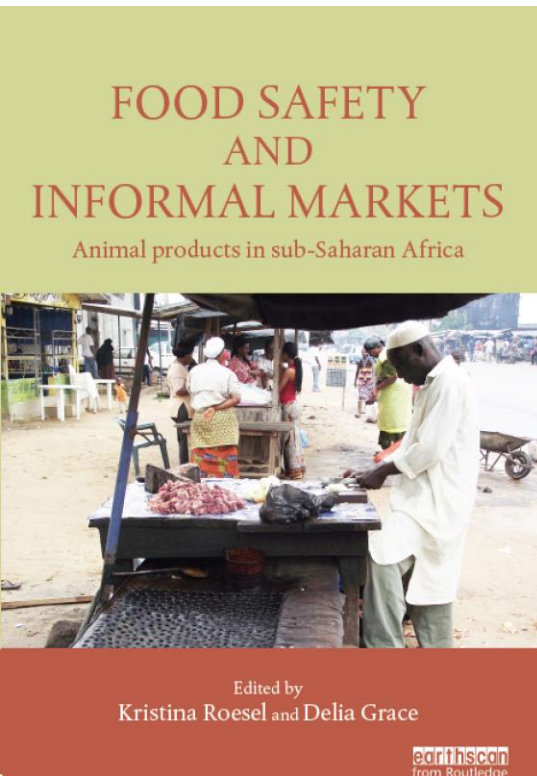
- Surveillance and response in animal hosts can reduce costs by 90%





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better lives through livestock

Evidence for ag. associated diseases



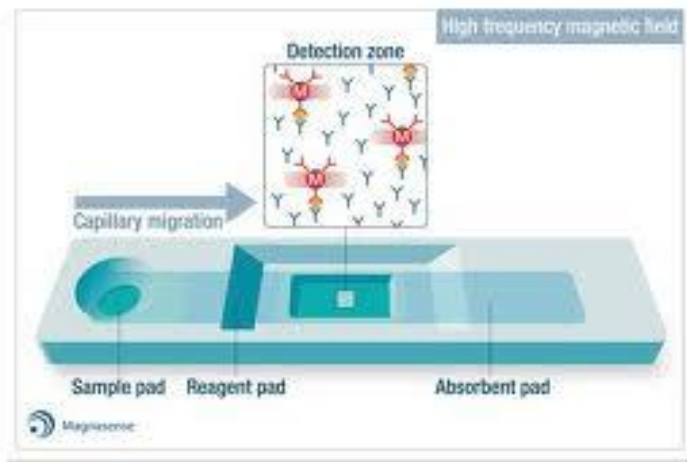
Ebola risk assessment in the pig value chain in Uganda



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Technologies for ag. associated diseases



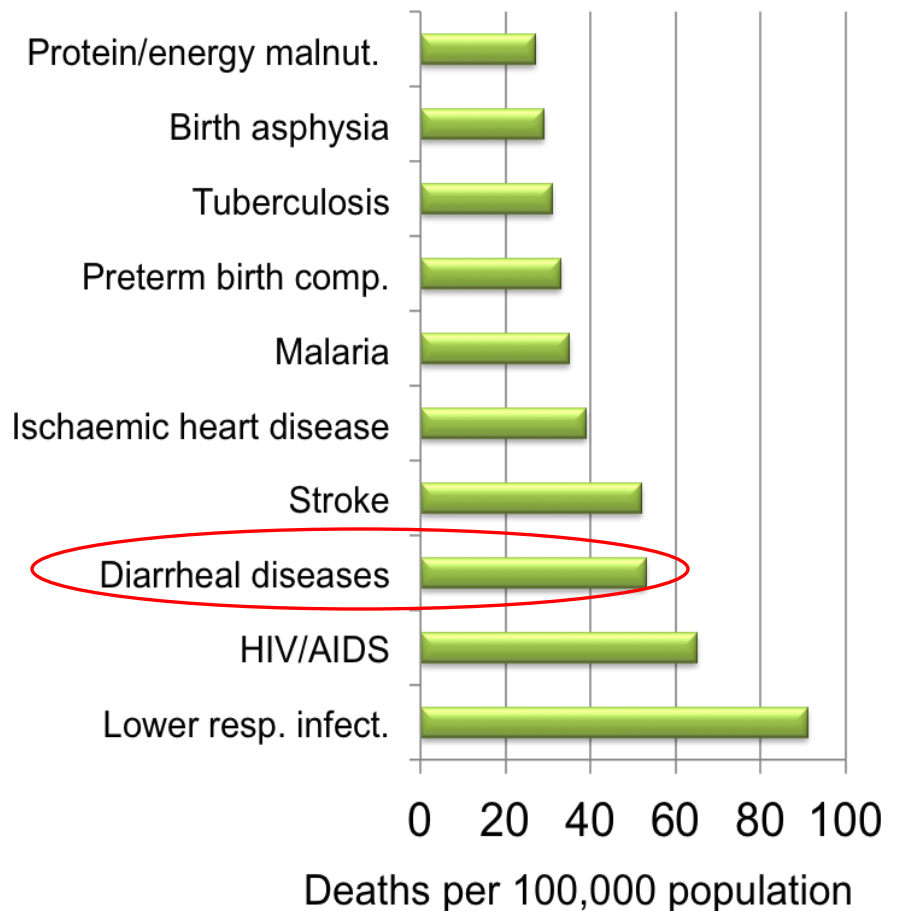
- Disease resistant animals
- Vaccines
- Rapid diagnostics
- Biocontrol for aflatoxins



Impact on ag. Associated diseases

- Food-borne disease is a major cause of diarrhea
- Most food is due to microbes in perishable foods
- Most perishables are sold in informal markets
- Workers in informal markets are untrained, often harassed, and have few incentives for selling safe food

Top 10 causes of death in low income countries (2012)





- Branding & certification of **milk vendors in Kenya & Guwahti, Assam** led to improved milk safety.
- It benefited the national economy by \$33 million per year in Kenyan and \$6 million in Assam
- 70% of traders in Assam and 24% in Kenya are currently registered
- 6 millllion consumers in Kenya and 1.5 million in Assam are benefiting from safer milk

<http://aghealth.wordpress.com>

