Ebola Risk Assessment in the Pig Value Chain in Uganda

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International Livestock Research Institute

At the foot of Kenya’s Ngong Hills
ILRI resources 2015

- Staff: 700
- Budget: US$84 million
- Senior scientists from 39 countries
- 34% of internationally recruited staff are women -and 50% of the senior leadership team
- Main campuses in Kenya and Ethiopia, and offices in 17 other locations around the world
ILRI Foresight ‘Risk assessment for Ebola in pig value chain in Uganda’

Hayman and Olival
2014
Why pigs?

- Known foci of *Ebola* in Uganda
- Discovery of *Ebola Reston* in pigs in Philippines in 2008
- Experimental infection of pigs with *Ebola Zaire*
- Link between other emerging diseases & intensive pigs & bats (Nipah)
- Massive increase pigs in Uganda
Hypothesis: Domestic pigs are naturally infected with Ebola virus; they play a role in the epidemiology of the virus as an amplification host they are a possible zoonotic source for human infection.
Potential host species have not undergone symptomatic or serological evaluation

Unknown sources of some index cases – direct exposure to bats & primates very unlikely for some

Bat-eating common in north but most Ebola in south

Dramatic increase in pig-keeping

97% smallholder, low biosecurity

Domestic pig habitat overlap with potential Ebola zoonotic environments

In DCR reported pig deaths preceded Ebola in people
Pig keeping and pig disease

Fever in pigs
Free-ranging pigs

Questionnaire survey
X villages
Y farmers
Date:
Temporal relation between pork consumption and Ebola outbreaks

Participatory Rural Appraisal
24 villages
Domestic pig interactions with wildlife

Survey of experts
Mar-Aug 14
15 experts
wildlife/livestock field based
Maps of risk factors

Ecological niche for Ebola

Pig density

Poverty

Pigott et al 2014

Wood et al 2014

Robinson et al 2014
Outbreaks associated with pigs, poverty, and ecology
Future directions

What of serological evidence of Ebola is found?

- Collaborative one health surveillance and in risk environment/behaviour assessment for VHF

- Further experimental studies

- Communication and risk management
Risk targeted active surveillance

Live pig and post mortem tissue sampling

Central abattoir in Kampala

Villages in high risk districts
Risk communication

Cascaded risk communication strategy developed

Ugandan vet authorities included in research team
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Questions?

Fact: Ebola can be passed onto humans through "consumption of bush meat."