Ebola Risk Assessment in the Pig Value Chain in Uganda

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International Livestock Research Institute
Better lives through livestock

CGIAR Research Program on Nutrition and Health

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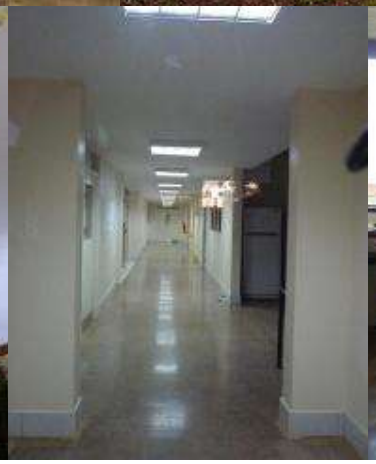
At the foot of Kenya's Ngong Hills



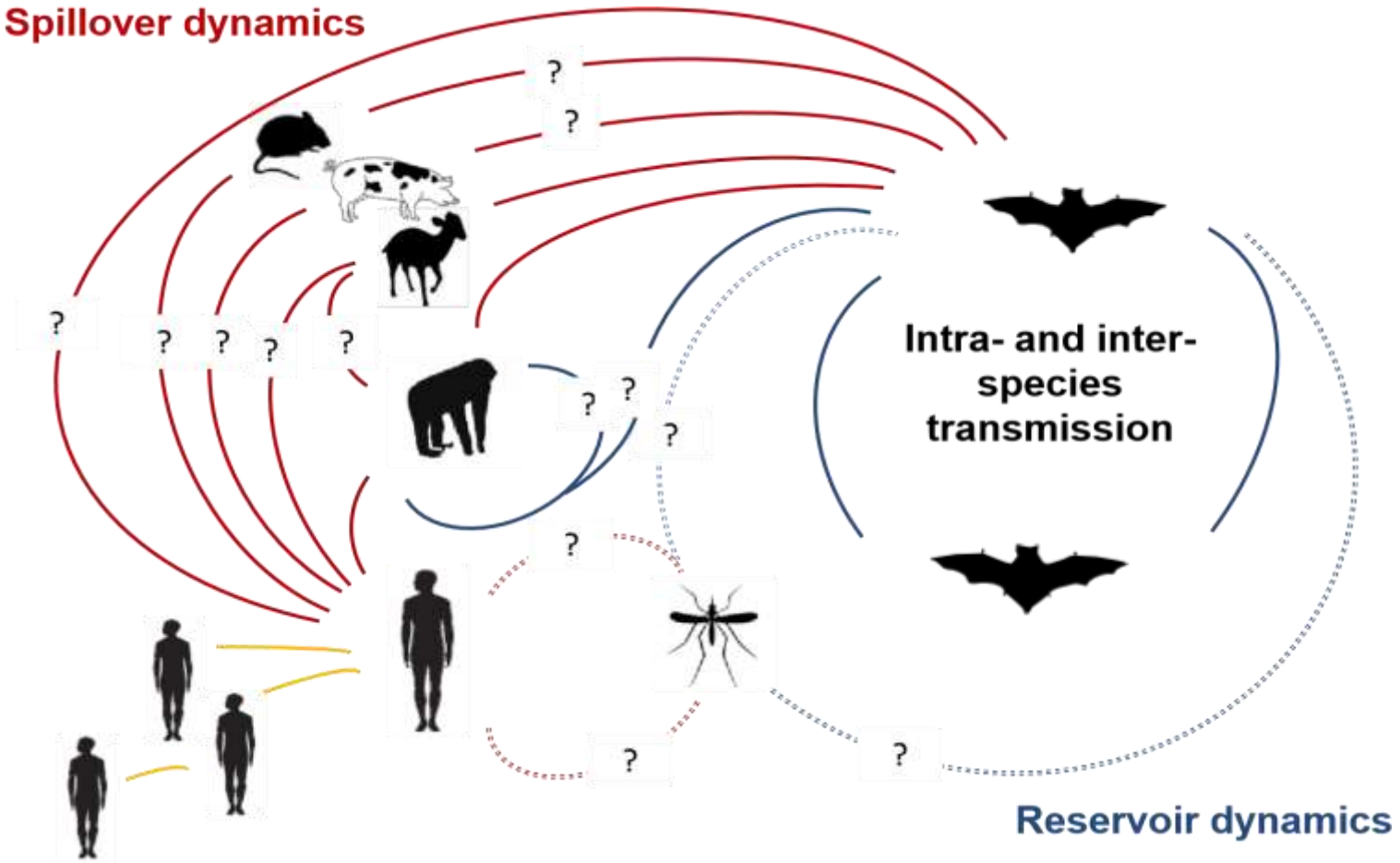
ILRI

CGIAR

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.

Grey & published literature review

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

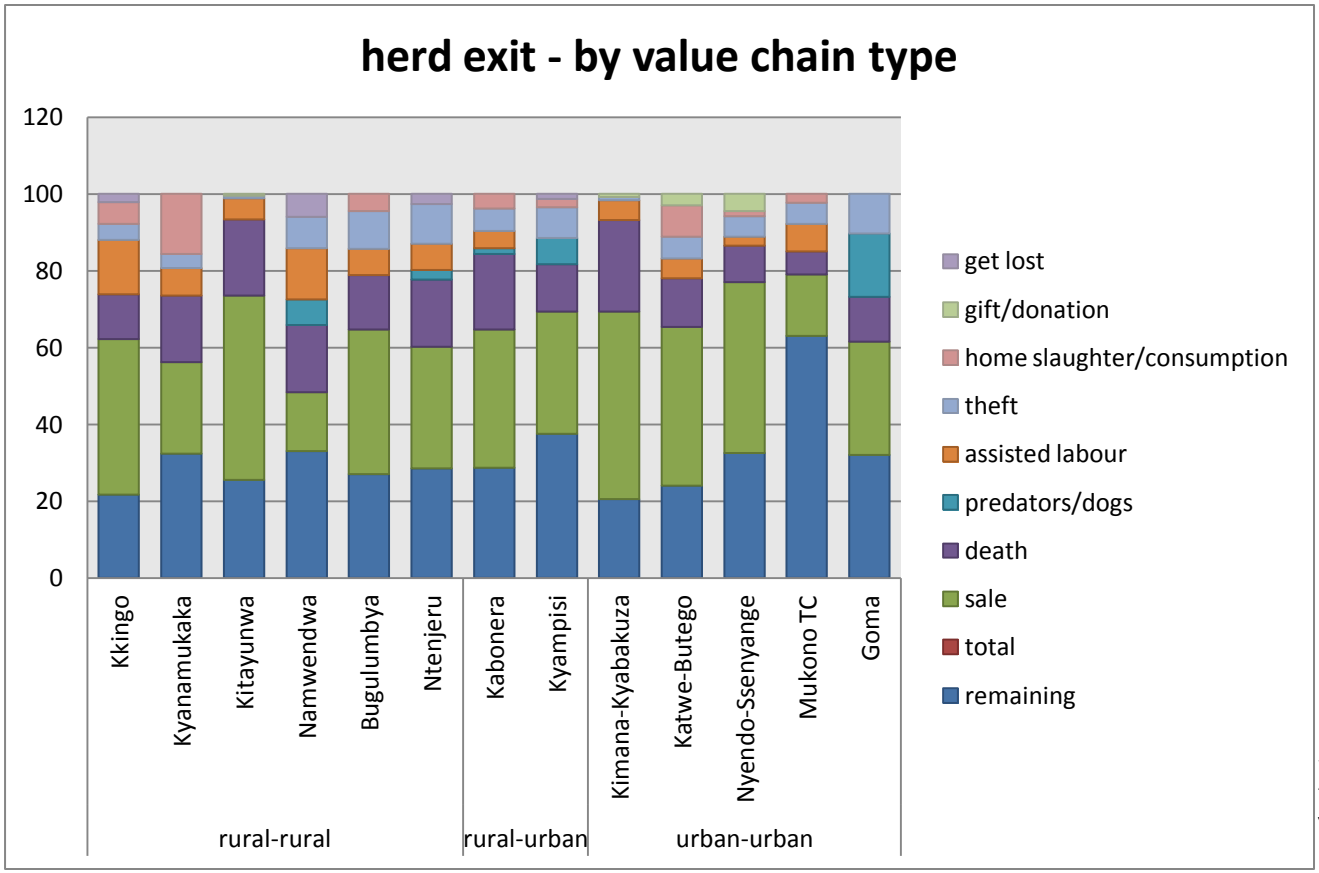
Domestic pig habitat overlap with potential Ebola zoonotic environments

In DCR reported pig deaths preceded Ebola in peop

Access initial report: https://cgspace.cgiar.org/handle/10568/4166

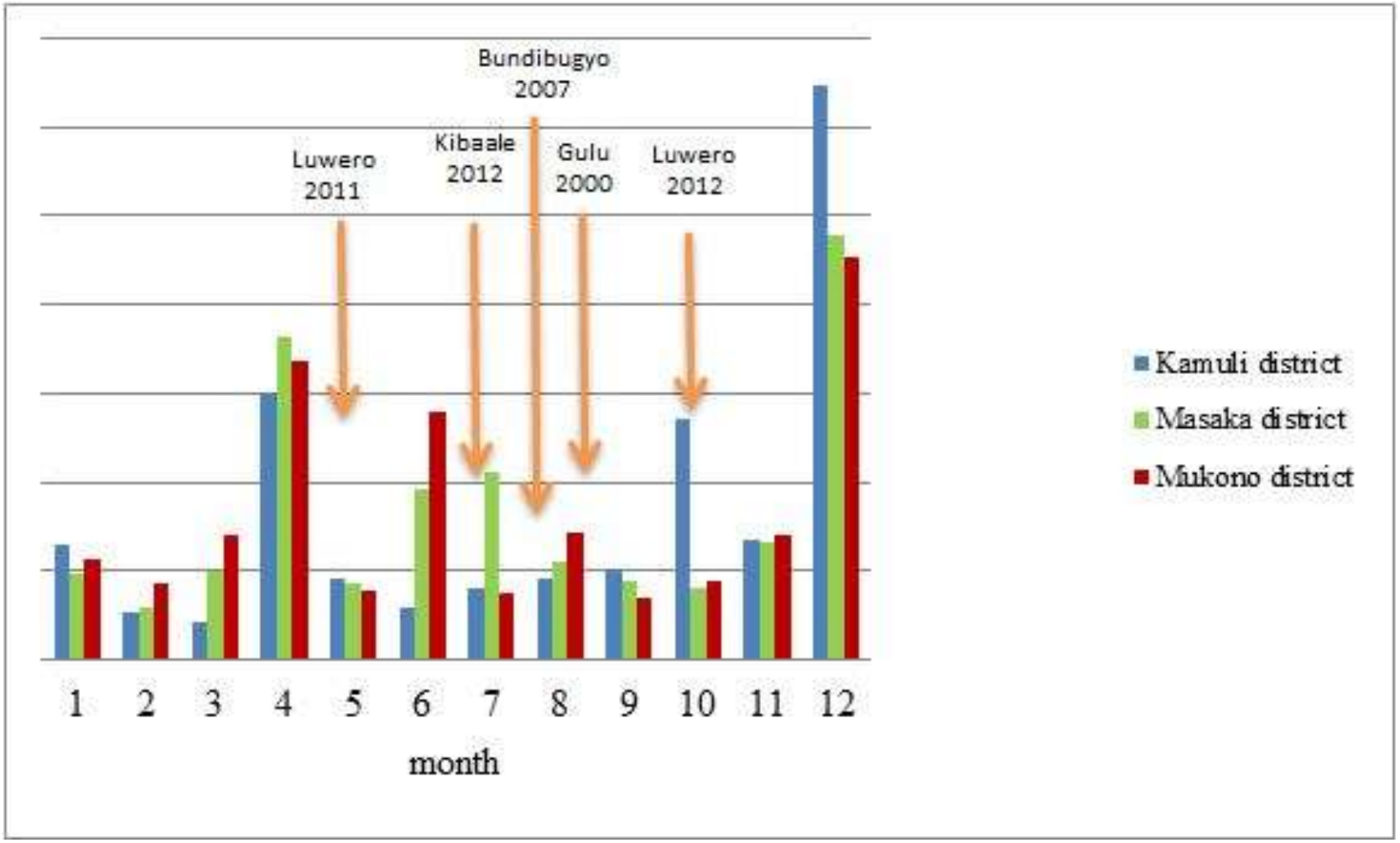
Pig keeping and pig disease

Fever in pigs
Free-ranging pigs



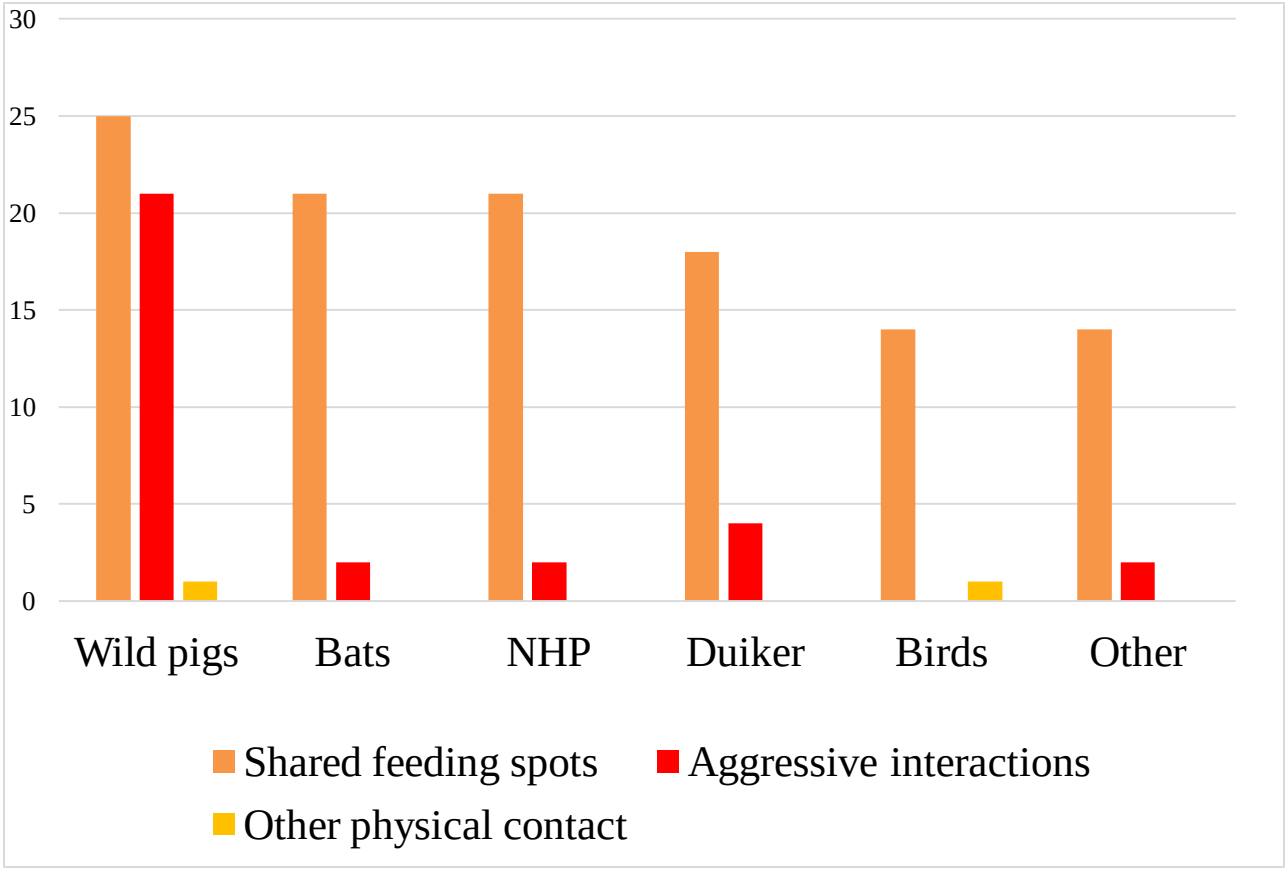
Questionnaire survey
X villages
Y farmers
Date:

Temporal relation between pork consumption and Ebola outbreaks



Participatory Rural Appraisal
24 villages

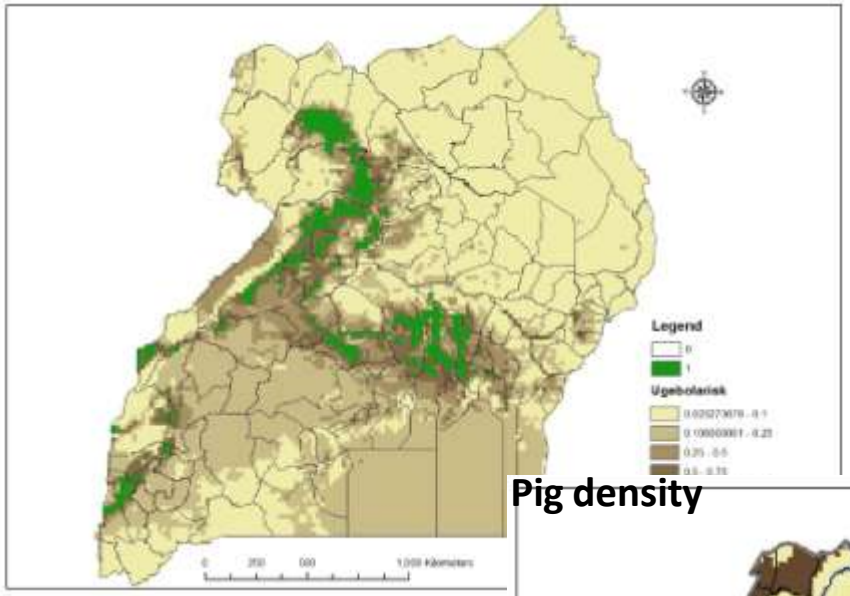
Domestic pig interactions with wildlife



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

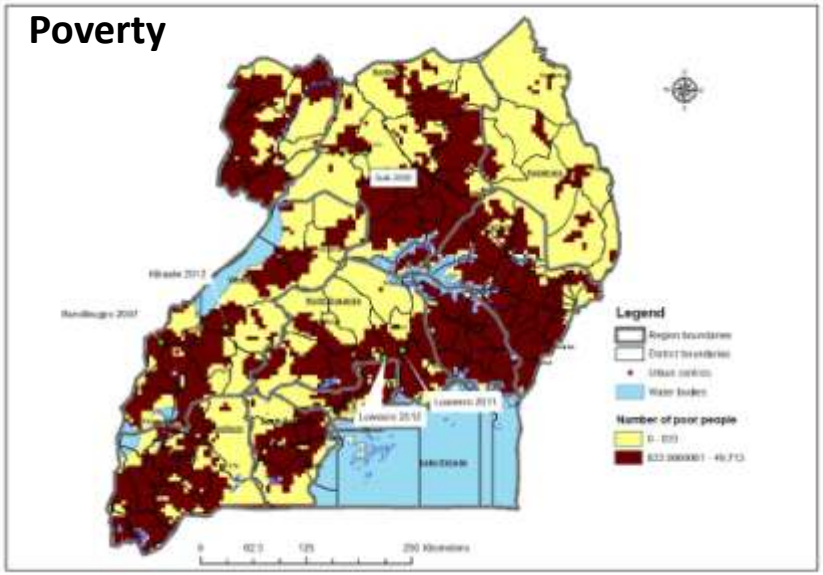
Maps of risk factors

Ecological niche for Ebola



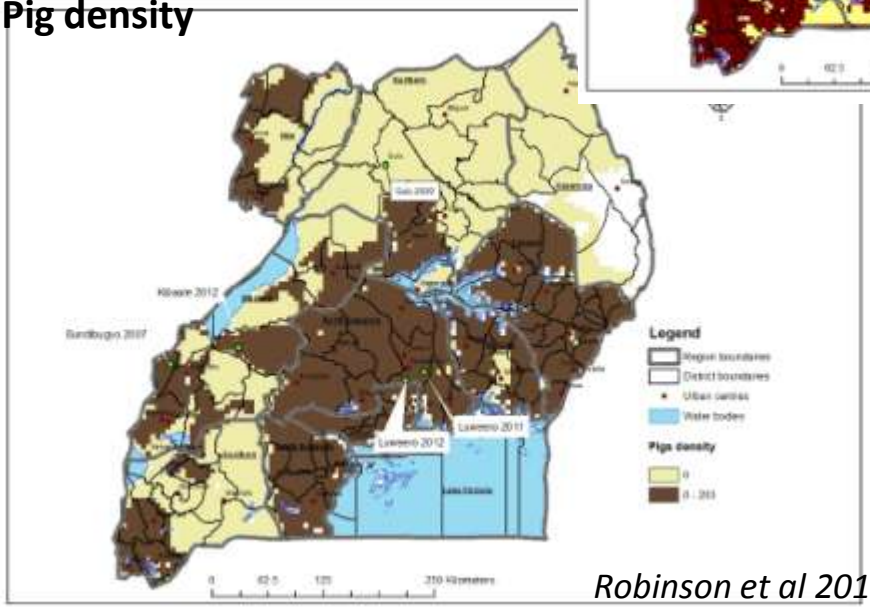
Pigott et al 2014

Poverty



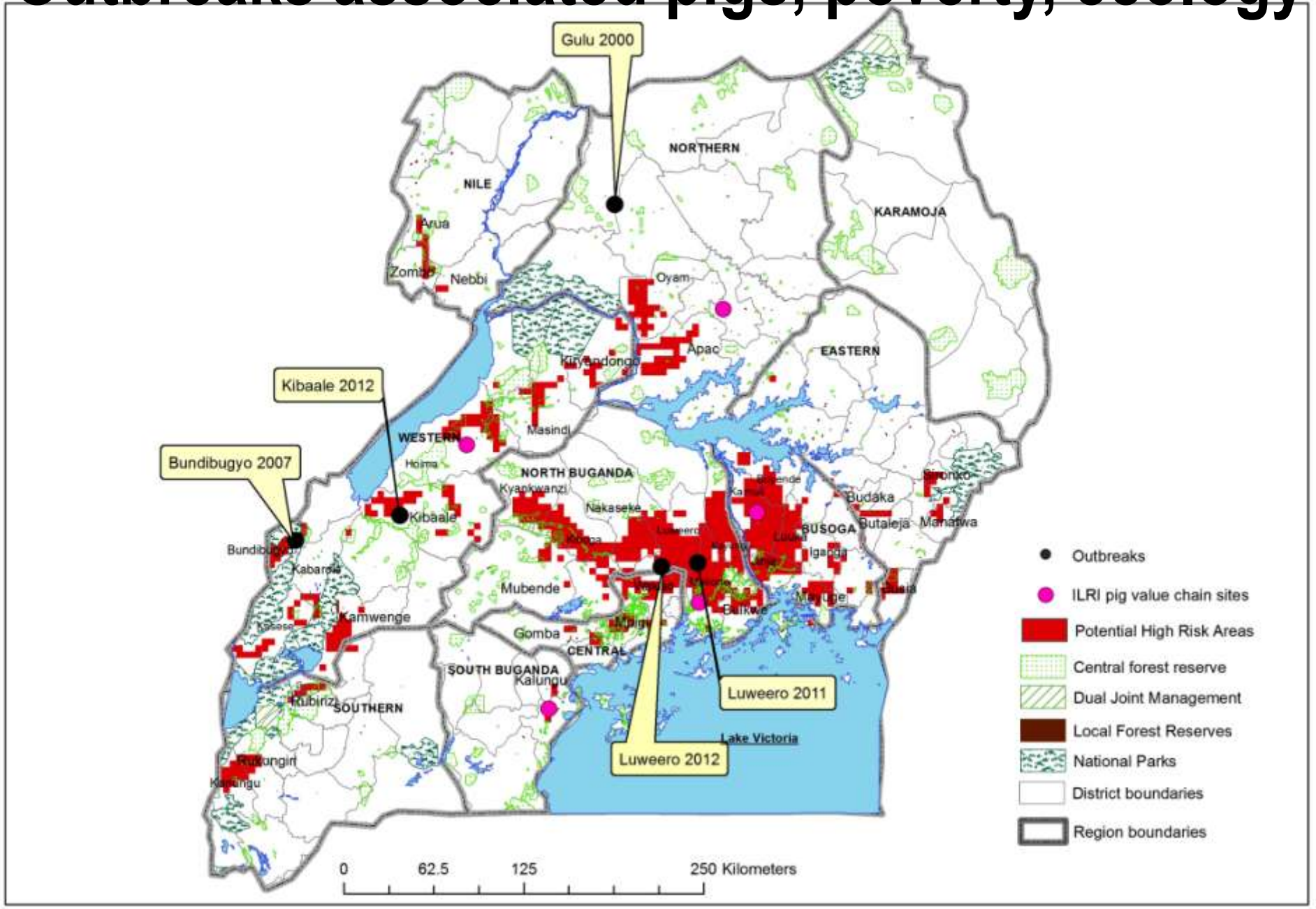
Wood et al 2014

Pig density



Robinson et al 2014

Outbreaks associated pigs, poverty, ecology



Future directions

What of serological evidence of Ebola is found?

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

- Further experimental studies

- Communication and risk management

Risk targeted active sureveillance

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

Acknowledgements

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Gladys Kalema-Zikosa (CTPH), Robert Kityo (Makerere University), Deo Ndumu (NADDEC), Luke Nyakarahuka (Makerere University/CDC)– Ugandan professional questionnaire respondents

Questions?


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


YES M.P,
CORRUPTION
CONSTITUENCY