

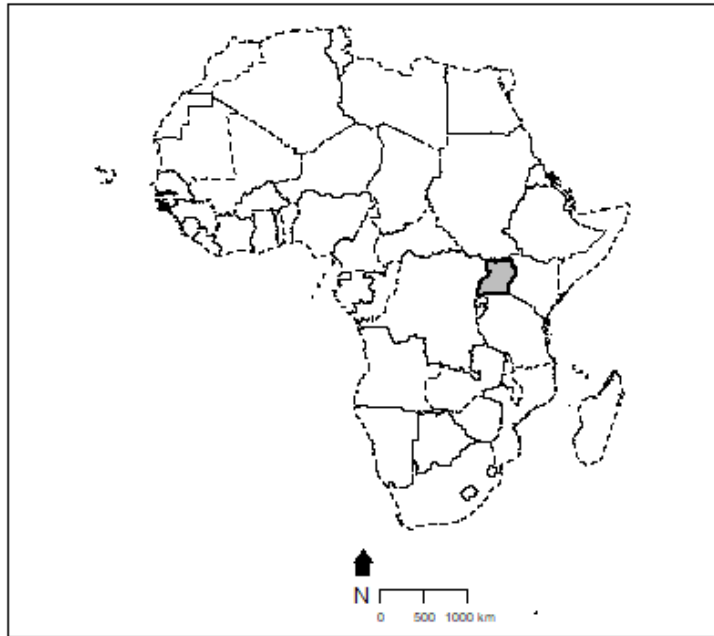


# A typology of smallholder pig farmers in Uganda

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# Background of Uganda

Map of Africa



- ❑ Uganda is located in East Africa with a human population of 44.5 million
- ❑ Agriculture contributes 24.5% to Uganda's Gross Domestic Product (World Bank, 2017)
- ❑ The livestock subsector contributes 17% to the agricultural GDP
- ❑ Livestock populations for cattle, goats, sheep and pigs are 14, 12.5, 3.5 and 3.2 million.

# Importance of pig farming



- ❑ Highest pig population in East Africa  $\Rightarrow$  3.2 Million
- ❑ Highest per capita pork consumption  $\Rightarrow$  3.4 kg/year
- ❑ 1.1 million households keep pigs
- ❑ Pig farming is important, especially for women

# Objectives of the study

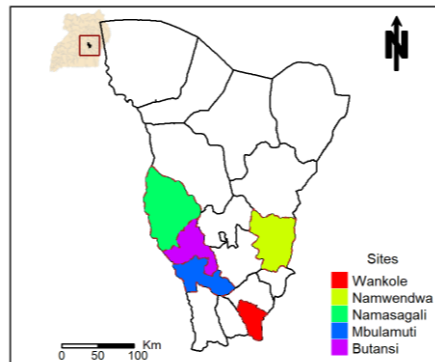
- ❑ Growth of the pig sector in Uganda
- ❑ The drivers of this growth are not clearly documented or understood
- ❑ Husbandry practices have been associated with changes in the level of production
  
- ❑ Investigate the structure of smallholder pig farming system across two districts in Uganda - Hoima and Kamuli
  - ❑ Discover latent subgroups delineated by socioeconomic and production variables
  - ❑ Describe the latent groups



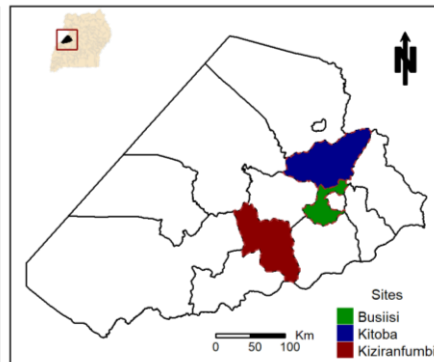
# Materials and methods

- ❑ Two study sites-
  - ❑ Kamuli in Eastern Uganda
  - ❑ Hoima in Western Uganda

Survey sites in Kamuli district



Survey sites in Hoima district



- ❑ A cross sectional survey of 200 households
- ❑ Collected household socioeconomic and pig production data



# Materials and methods

## ❑ Data

- ❑ Structured questionnaires

## ❑ Data analysis

- ❑ Data entry and management
  - ❑ Census and Survey Processing System (CSPro)
- ❑ Data manipulation and analysis
  - ❑ R and Microsoft Excel

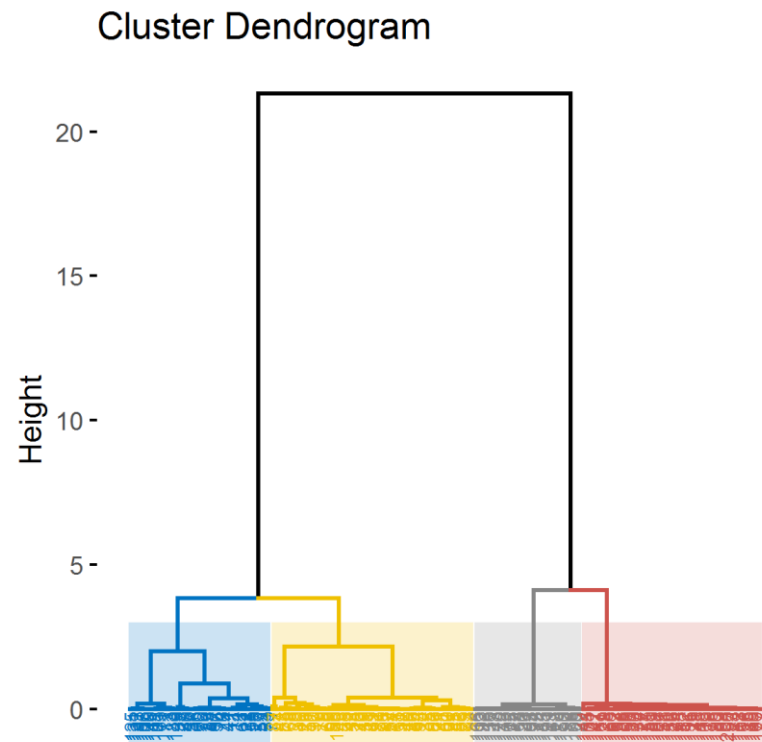
## ❑ Multivariate analysis

- ❑ R package FactoMineR (Lê, Josse et al. 2008)
- ❑ R package Factoextra (Alboukadel Kassambara and Fabian Mundt 2017)
- ❑ Categorical data
  - $\chi^2$  test at 0.05 significance level
- ❑ Continuous data
  - Analysis of variance and post-hoc Tukey's HSD test

# Results

## Cluster solution

- 4 typologies identified



## Typology 1

- Located in Kamuli
- Over 80% male-headed
- Primarily engaged in food crop production
- Secondarily keeps pigs for breeding
- Labor mostly provided by adult female
- Decisions related to pig enterprise mostly made by adult male
- High preference for growth and reproduction traits of sows

# Results

## Typology 2

- In Kamuli
- Over 80% male headed
- Crop and pig production for savings
- Labor done singly or jointly by adult male or female
- Adult female decides on chores in enterprise
- Adult male decides on purchases/sales
- Moderate preference for growth and reproduction traits of sows





# Results



## □ Typology 3

- In Hoima
- 55.6% female-headed
- Primarily keeps pigs for income and savings
- Adult female is the main decision maker and labor provider in pig enterprise
- High preference for morphometric traits of sows

# Results

## □ Typology 4

- In Hoima

- Over 90% male headed

- Primarily food crop production

- Secondarily keep pigs for savings and income

- Decisions made and labor provided jointly by adult male and female

- High preference for morphometric and reproduction traits of sows



# Trait preferences - sows

Trait	Typology 1	Typology 2	Typology 3	Typology 4	p-value
Body length	4.8	4.8	4.2	4.4	0.00014
Back shape	2.4	1.5	3.2	3.2	<0.0001
Height at Withers	1.9	1.5	4.4	4.5	<0.0001
Number of teats	4.2	3.5	3.4	3.8	<0.0001
Growth rate	4.0	3.8	4.9	4.9	<0.0001
Temperament	1.4	0.3	2.8	2.7	<0.0001
Ear-shape	1.6	2.5	4.6	4.7	<0.0001
Mouth shape	1.5	1.6	4.5	4.2	<0.0001
Color	3.8	2.3	3.1	2.7	<0.0001
Fecundity	4.8	3.8	3.6	3.9	<0.0001
Litter size	4.9	4.1	4.8	4.8	<0.0001
Feed intake	4.0	3.1	3.5	4.0	<0.0001
Disease resistance	4.7	3.2	4.6	4.6	<0.0001
Heat resistance	2.3	0.6	3.4	3.4	<0.0001



# Discussion and conclusion

- ❑ Four typologies were differentiated by
  - ❑ gendered roles in the pig enterprise
  - ❑ location of household
  - ❑ gender of household head
- ❑ Gender roles likely to be influenced by culture and norms



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