Safe Food, Fair Food in Uganda

Kristina Roesel and Natalie Carter
Presented at the PigRisk project outcome mapping and in-depth survey workshop
Hanoi, Vietnam, 18 June 2013

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CGIAR RESEARCH PROGRAM ON Agriculture for Nutrition and Health

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Pigs and pork in Uganda

Pigs and pork in Uganda

- Highest per capita consumption in SSA (3.4 kg)
- Explosion in pig numbers over the past 30 years (0.19-2.3 million pigs, FAO)
- Mostly in hands of smallholders, especially women's activity
- Live asset, "piggy bank"
- "Pork joint" phenomenon

Kampala News in June 2012

Daily Monitor

Mwondha case: Lawyers plan to meet on June 29

Pork chopped ready for preparation. Kampala Capital City Authority team has found that most pork abbattoirs around the city do not meet the required standards, putting the health of many people at risk.

Most pork in Kampala is unsafe - health experts

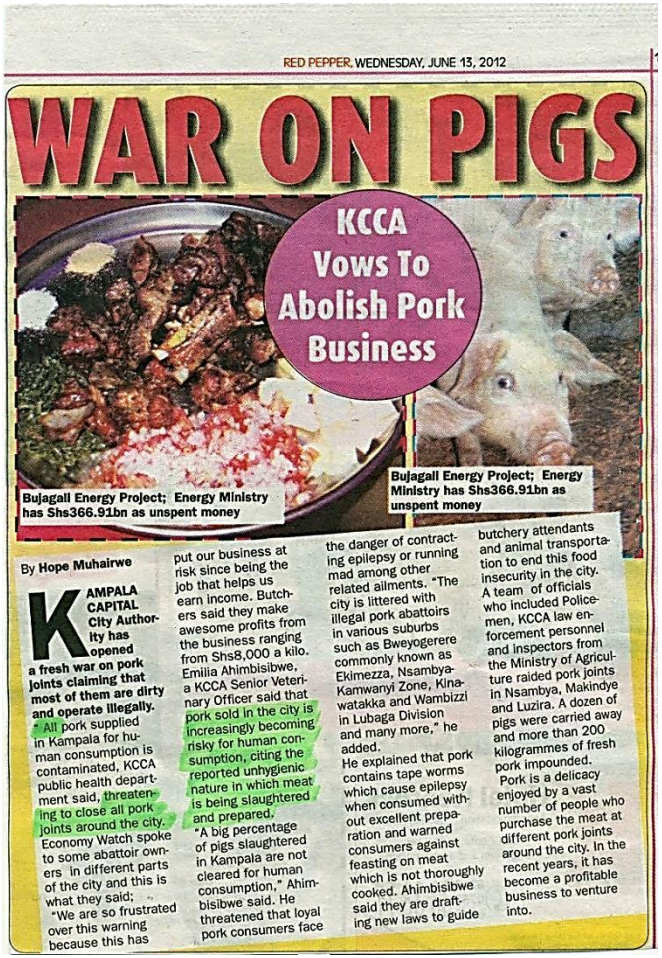
INSPECTED FIGURE

50 per cent

The percentage of animals that KCCA says it gets to inspect, of the 200 slaughtered daily.

- „Majority of pork in Kampala contaminated“
  → *with what?*
- „Increasingly risky for human consumption“
  → *consequences?*
- „Loyal pork consumers face running mad“
  → *per se?*

Kampala News in June 2012



RED PEPPER, WEDNESDAY, JUNE 13, 2012

WAR ON PIGS

KCCA Vows To Abolish Pork Business

Bujagali Energy Project; Energy Ministry has Shs366.91bn as unspent money

Bujagali Energy Project; Energy Ministry has Shs366.91bn as unspent money

By Hope Muhairwe

KAMPALA CAPITAL City Authority has opened a fresh war on pork joints claiming that most of them are dirty and operate illegally.

" All pork supplied in Kampala for human consumption is contaminated, KCCA public health department said, threatening to close all pork joints around the city.

Economy Watch spoke to some abattoir owners in different parts of the city and this is what they said;

"We are so frustrated over this warning because this has put our business at risk since being the job that helps us earn income. Butchers said they make awesome profits from the business ranging from Shs8,000 a kilo.

Emilia Ahimbisibwe, a KCCA Senior Veterinary Officer said that pork sold in the city is increasingly becoming risky for human consumption, citing the reported unhygienic nature in which meat is being slaughtered and prepared.

"A big percentage of pigs slaughtered in Kampala are not cleared for human consumption," Ahimbisibwe said. He threatened that loyal pork consumers face the danger of contracting epilepsy or running mad among other related ailments. "The city is littered with illegal pork abattoirs in various suburbs such as Bweyogerere Ekimezza, Nsambya-Kamwanyi Zone, Kinawatakka and Wambizzi in Lubaga Division and many more," he added.

He explained that pork contains tape worms which cause epilepsy when consumed without excellent preparation and warned consumers against feasting on meat which is not thoroughly cooked. Ahimbisibwe said they are drafting new laws to guide butchery attendants and animal transportation to end this food insecurity in the city.

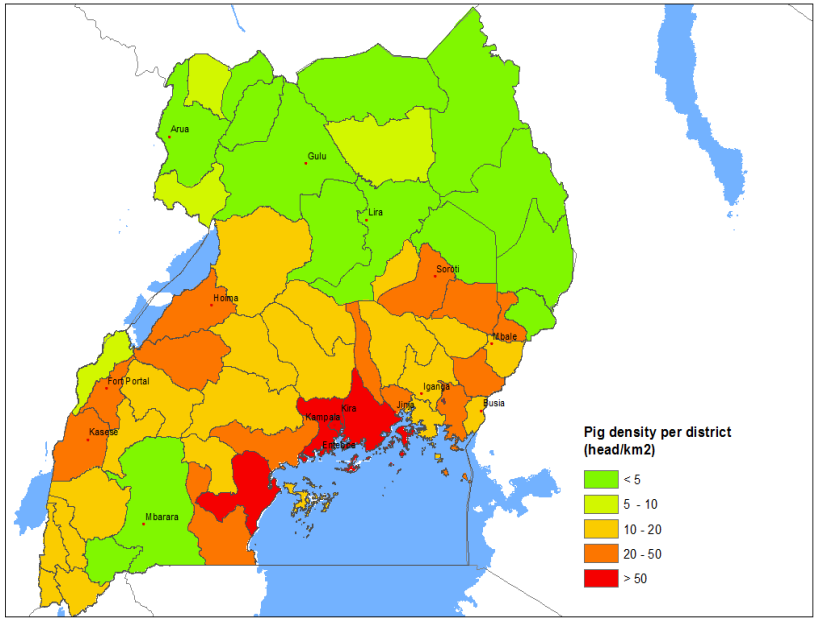
A team of officials who included Policemen, KCCA law enforcement personnel and inspectors from the Ministry of Agriculture raided pork joints in Nsambya, Makindye and Luzira. A dozen of pigs were carried away and more than 200 kilogrammes of fresh pork impounded.

Pork is a delicacy enjoyed by a vast number of people who purchase the meat at different pork joints around the city. In the recent years, it has become a profitable business to venture into.

- „**<u>ALL</u>** pork supplied in Kampala for human consumption is contaminated“
  → *defamation, severerly damaging a sector‘s reputation*

- „Threatening to close all pork joints around the city“
  → *risk of unemployment*

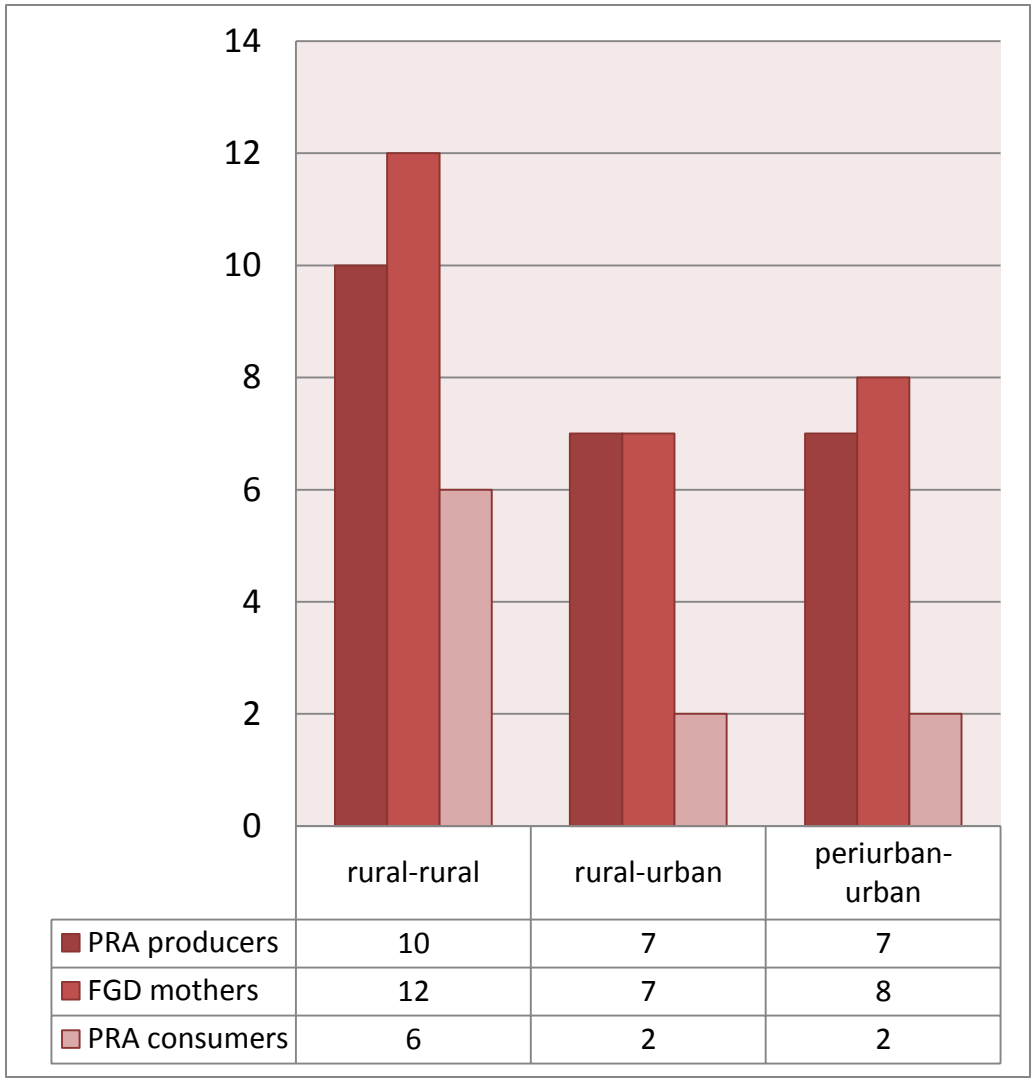
Integration



- Well integrated to ILRI Livestock & Fish value chain project (small holder pig value chain development project, SPVCD)
- Value chain assessment only started in November 2012 after sites were selected under SPVCD
- In the first year: rapid integrated assessment of food safety and nutrition in 3 districts in Uganda, 4 complementary studies, 4 postgraduate projects, 1 intern

Rapid integrated assessment of food safety (and nutrition)

- 24 participatory rural appraisals with pig producers
- 10 participatory rural appraisals with pig producers as consumers
- 27 focus group discussions with mothers of young children
- 2 female and 2 male facilitators trained in the food safety assessment tool



	rural-rural	rural-urban	periurban-urban
PRA producers	10	7	7
FGD mothers	12	7	8
PRA consumers	6	2	2

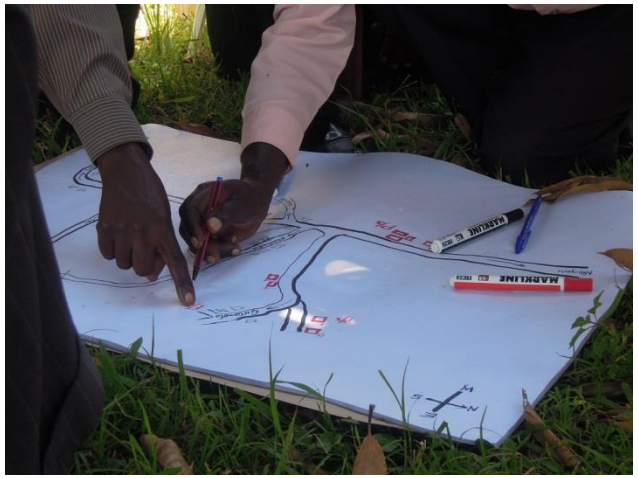
101 men, 194 women participated

Procedure of integrated VCA

- Recruitment and training of facilitators
- 2x pre-testing of tools
- Random selection of 40 pig farmers in each of the 34 villages
- Launching workshop in each district to introduce projects to all stakeholders and review tools with local veterinary, animal production and extension staff

A typical VCA day in the field

- Plenary to introduce projects and obtain consent
- Participants randomly allocated into 4 groups of 10 people each plus one group of key informants
- Morning session:
  1. Feeds/ breeds
  2. Value chain mapping/markets
  3. Animal health
  4. Food safety/nutrition



- Tea and lunch provided
- Plenary after lunch where each group presented the constraints and opportunity matrix
- Afternoon session: 2 groups of women/ 2 groups of men – decision making/ activity clock

Objectives of pig keeping

Main objective: income and soil fertility management.
No significant difference between men and women.

	Average rank (1=highest)	
Objective	**Men**	**Women**
Income from piglet/pigs sales	1.3	1.2
Income from pig meat sales	2.0	N/A
Source of wealth	2.3	2.3
Manure production	2.3	2.3
Disposal of waste	3.0	3.0
Nutrition/food security	2.5	2.8
Occupation	2.3	2.6

SPECIFIC INPUT/SERVICE CONSTRAINTS

Input type	Constraint	No. of respondents reporting	Respondents reporting/total (%)
Animal health products	Counterfeit products	20	6
	Knowledge on how to use	7	2
	Unavailability of products	7	2
	Price fluctuations	5	2
Credit facilities	Lack of information on credit facilities	15	5
	High interest rates on loans	24	8
Extension	Poor access to extension service (few extensionists)	15	5
Feeds	Expensive	77	25
	Poor quality	51	16

Feeding systems

Extensive: permanent scavenging
Semi-intensive: sometimes scavenge
Intensive: total confinement

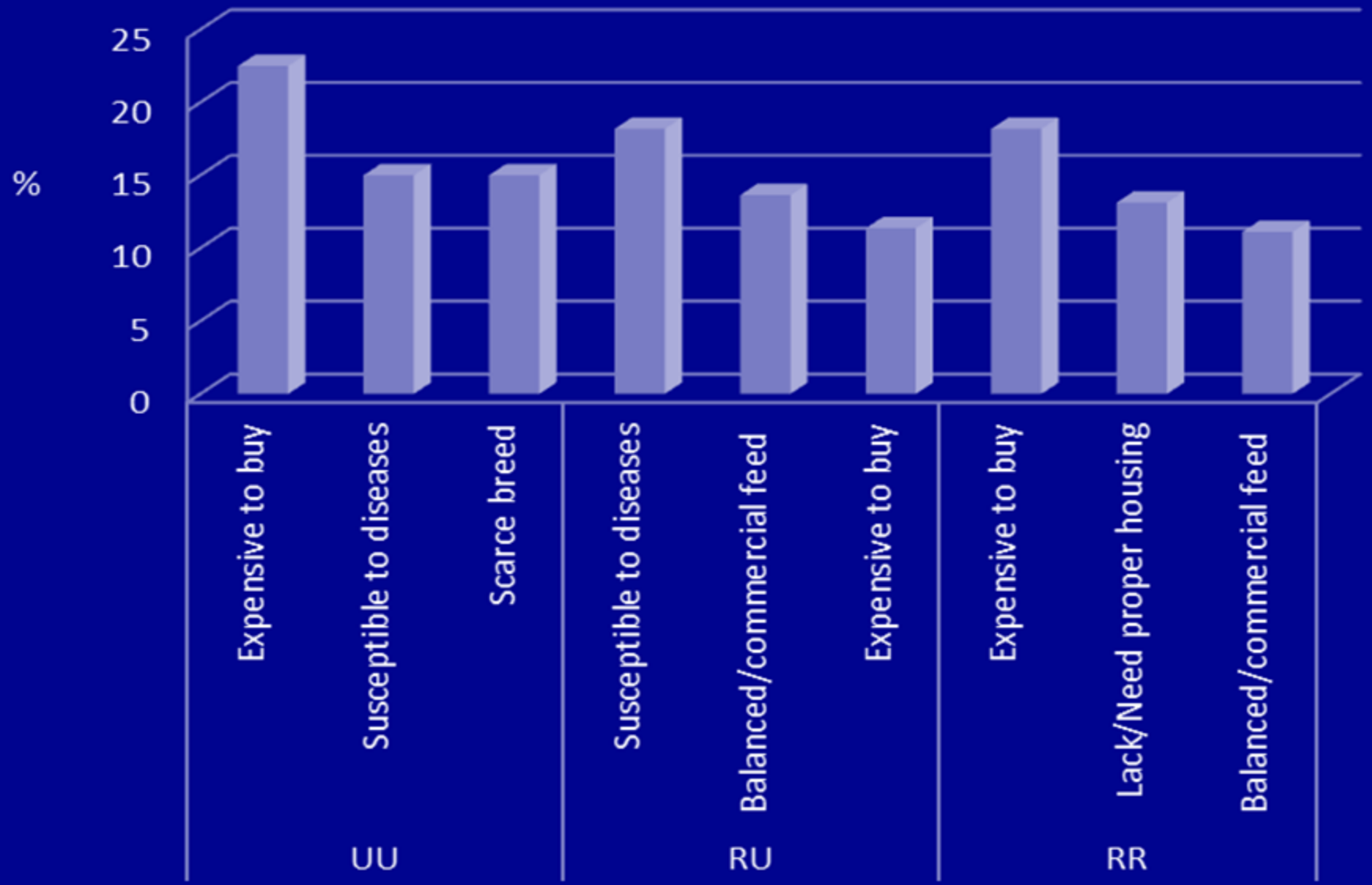
Breed Types

Attributes identified by farmers for different breed types

Characteristics	Tally	Local	Cross-bred	Exotic
Many teats(> 12)	41	2.8	1.8	1.3
Mothering ability	2	3.5	1.5	1.5
Large litter size	3	3.3	2	1
Horizontally long	64	3.2	1.9	1.3
Floppy ears	57	3.1	1.73	1.4
Fast growth	20	3.6	1.8	1.3
Color/skin appearance	16	1.7	1.5	1.6

Note: Scores from 1 to 5, being 1 = very good and 5 = very poor

Constraints to accessing the preferred breeds



Summary

At the farm level

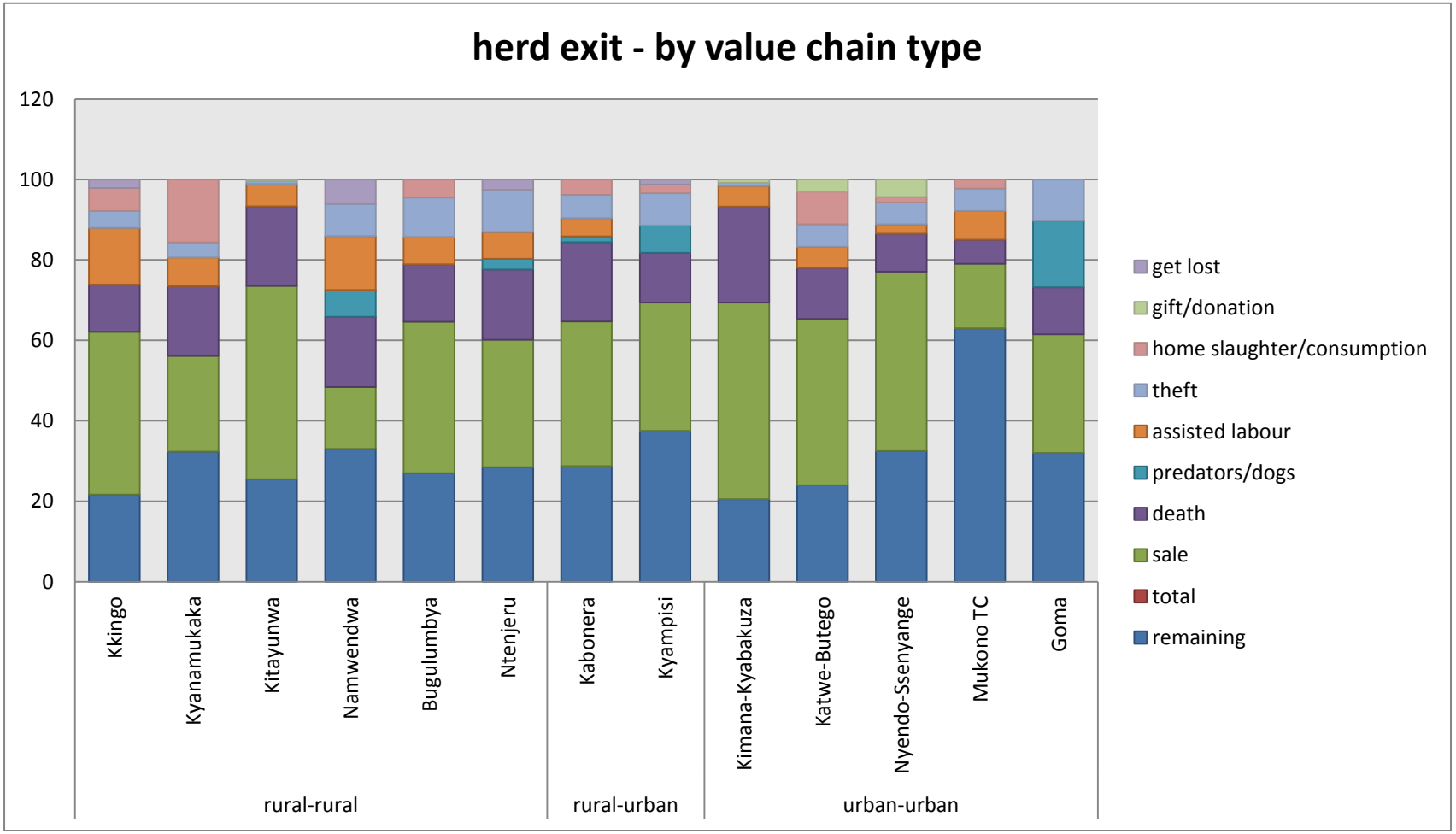
- Nutrition and Feed (seasonality, poor quality)
- Health (parasites, African swine fever)
- Breeding (inbreeding and lack of breeding stock)
- Husbandry and management
- Poor access to information and services
- Limited organizational strategies
- No economies of scale

SUMMARY

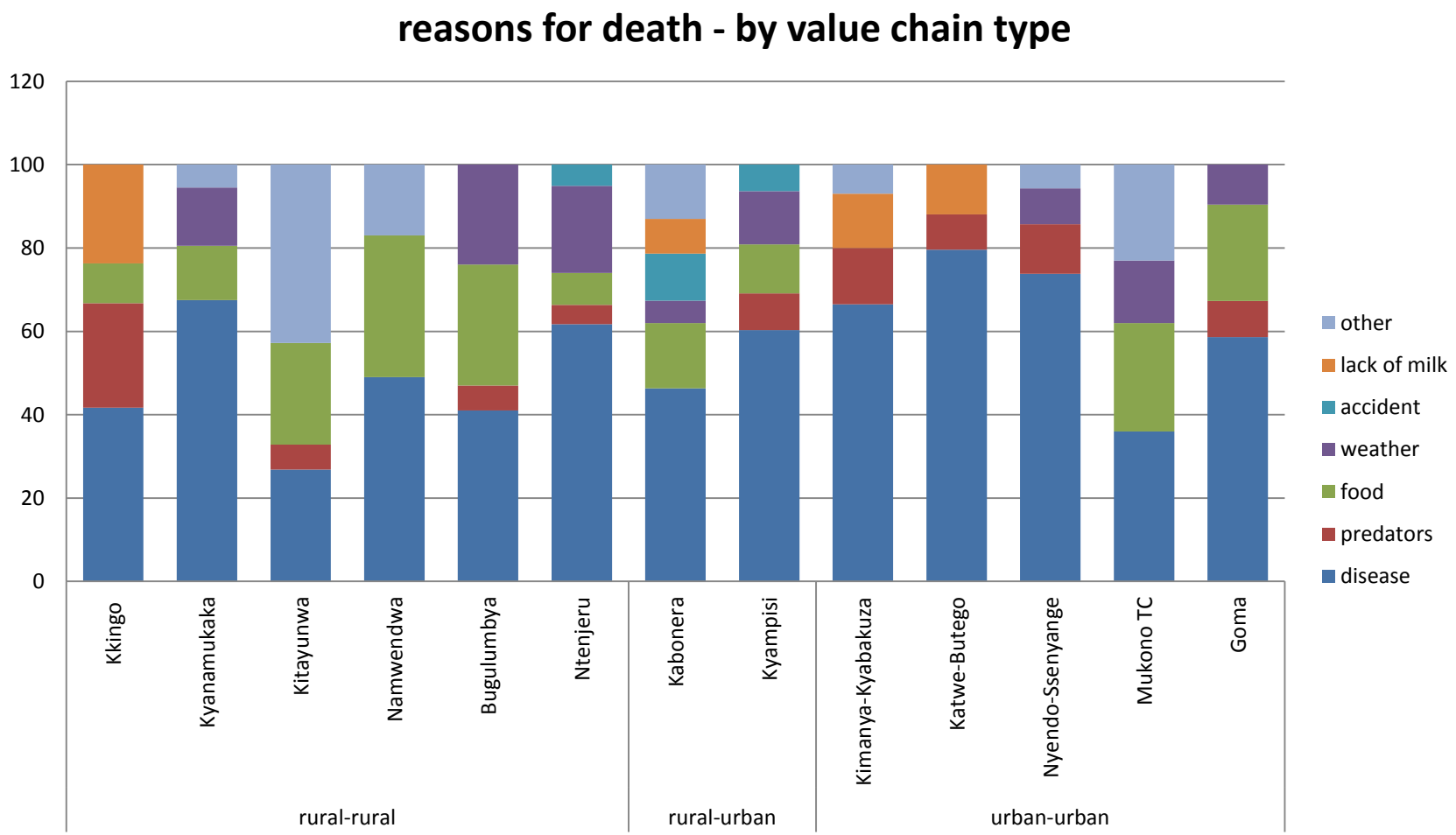
At the market level

- Organizational strategies
- Road infrastructure
- Market information/standards
- Disease control and public health concerns
- Slaughter technology and infrastructure
- Processing sector

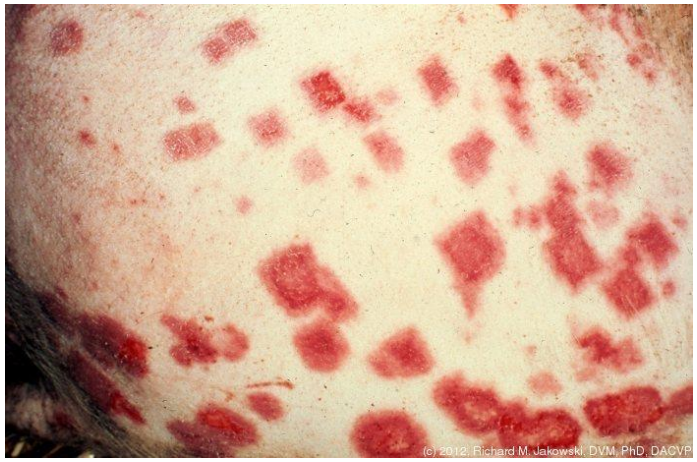
Reasons for herd exit



Reasons for death

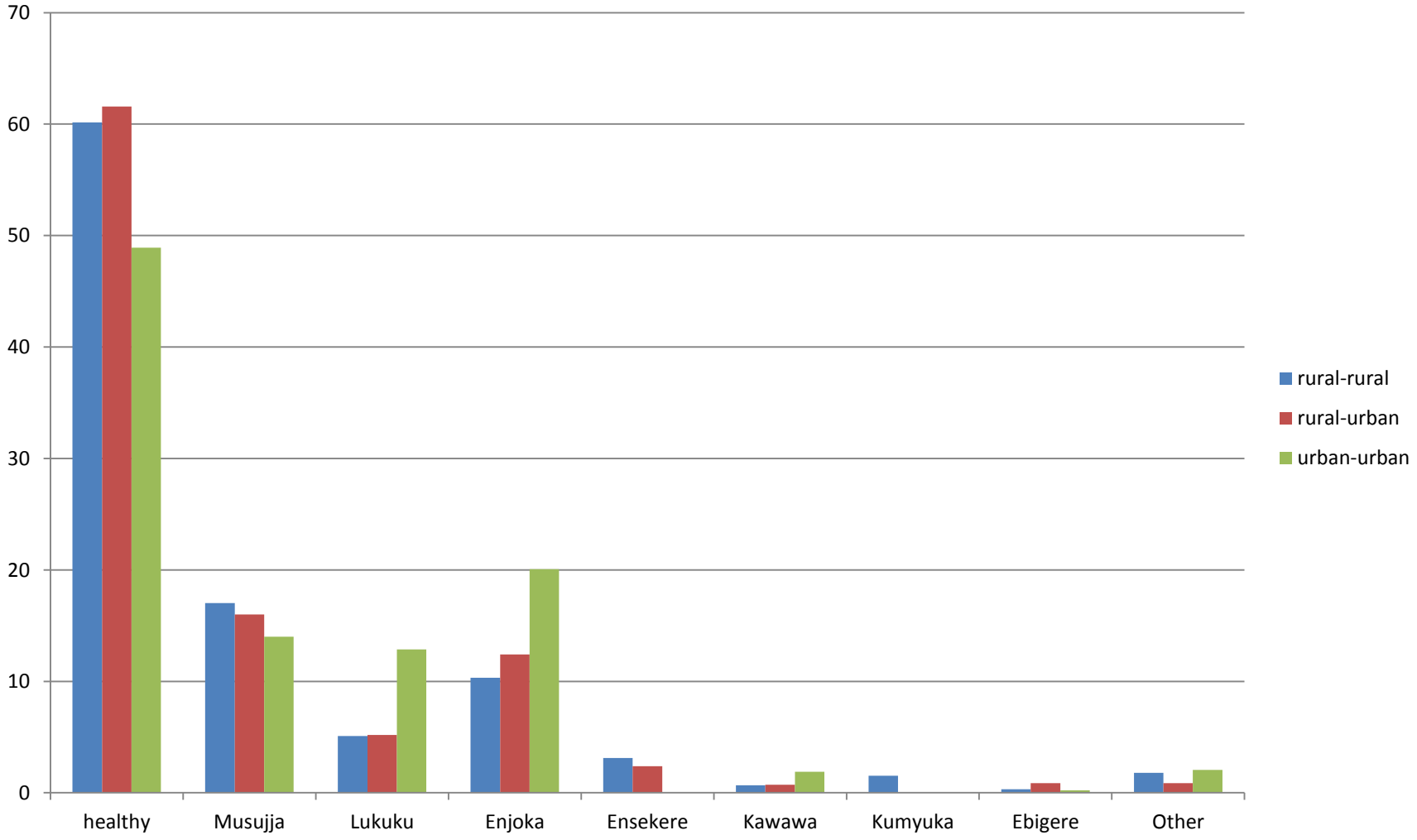


Most common diseases (n=24)

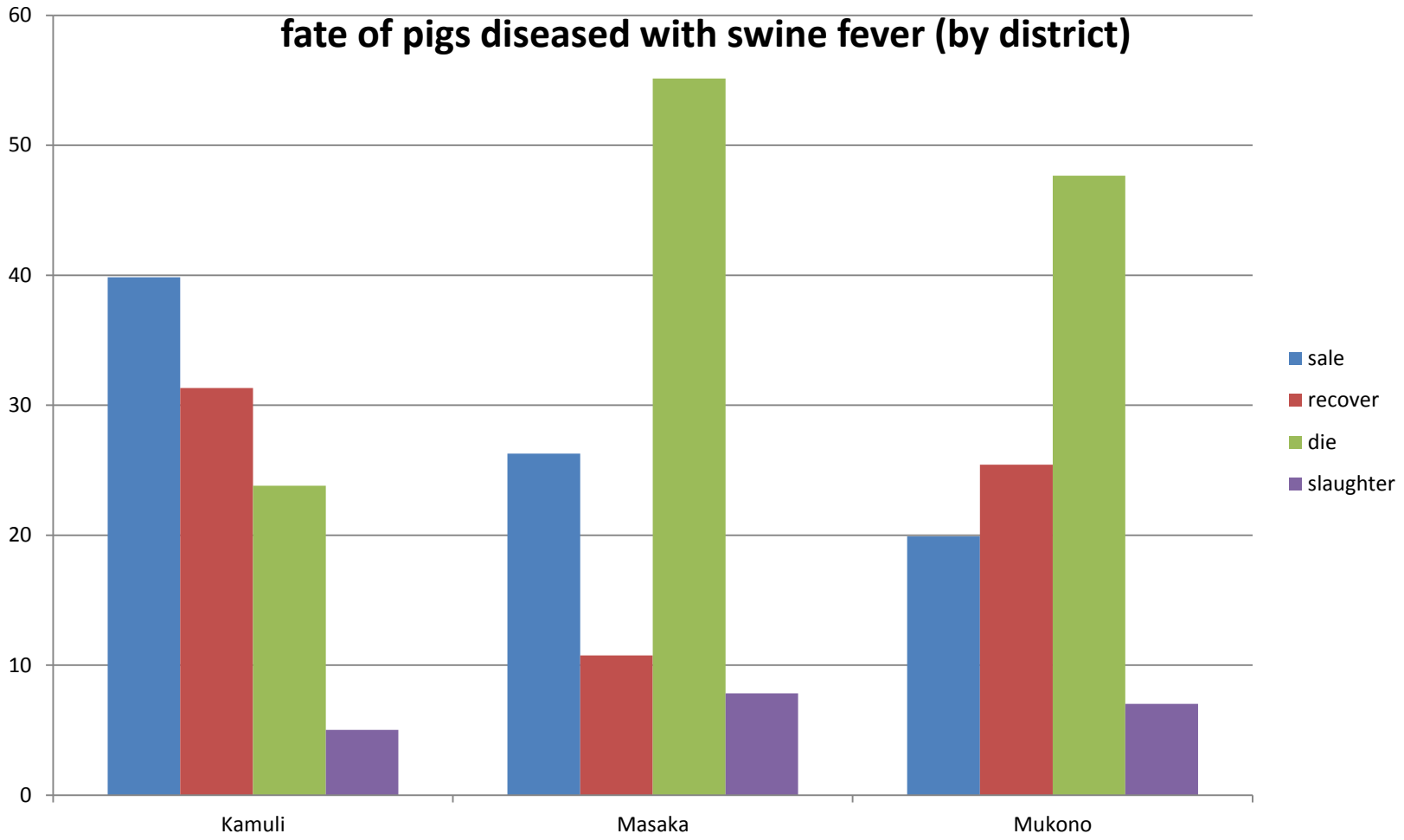


- In all villages:
  - Swine fever (Musujja)
  - Worms
  - Sarcoptic mange
- In 10 villages:
  - Lice
- In 5 villages (Masaka only):
  - Biting flies
- In 4 villages (Kamuli only):
  - Diamond skin disease
- In 4 villages (Masaka only):
  - Foot rot, rotting toe

Disease incidence (n=24 villages)



Fate of diseased pigs (n=24)



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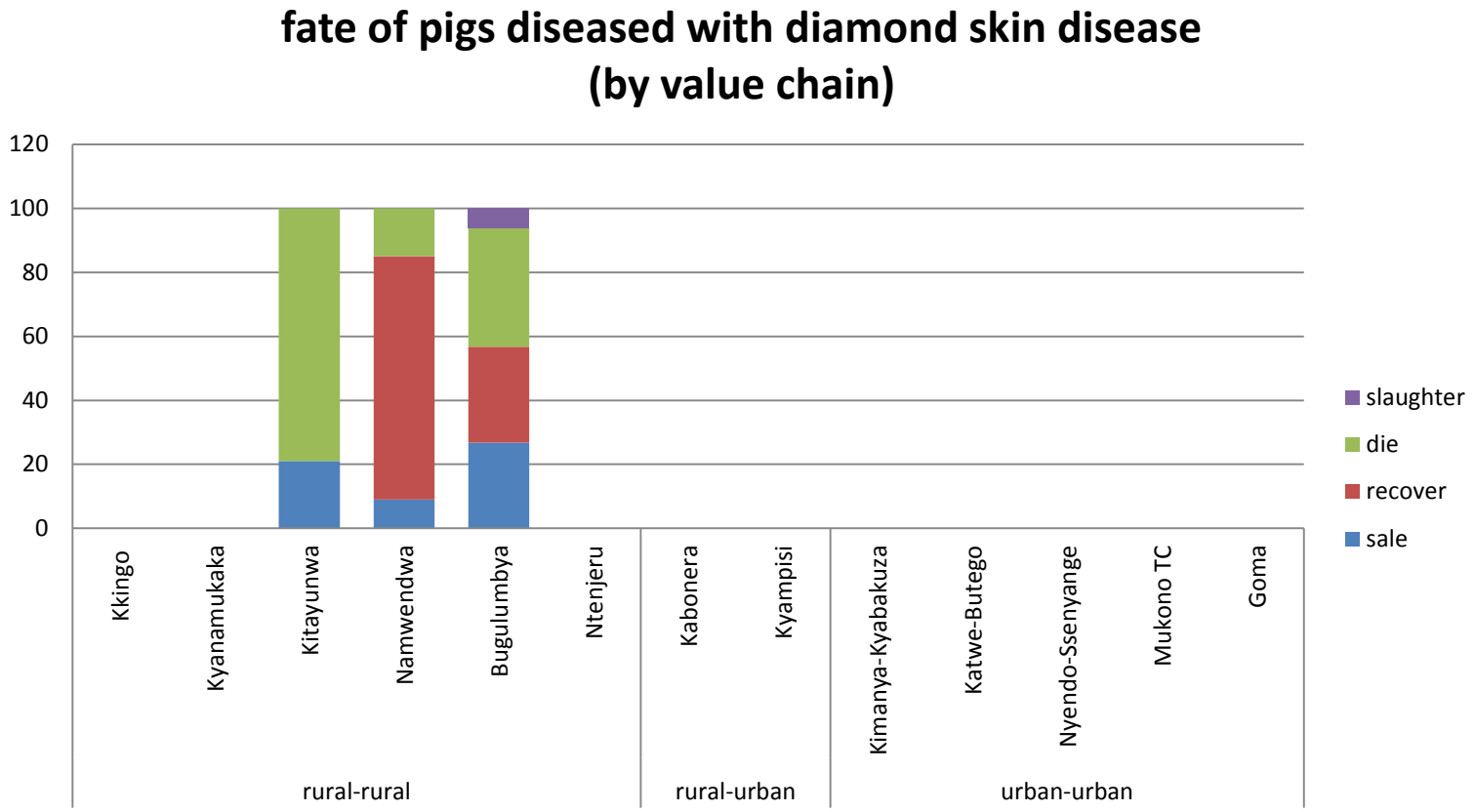
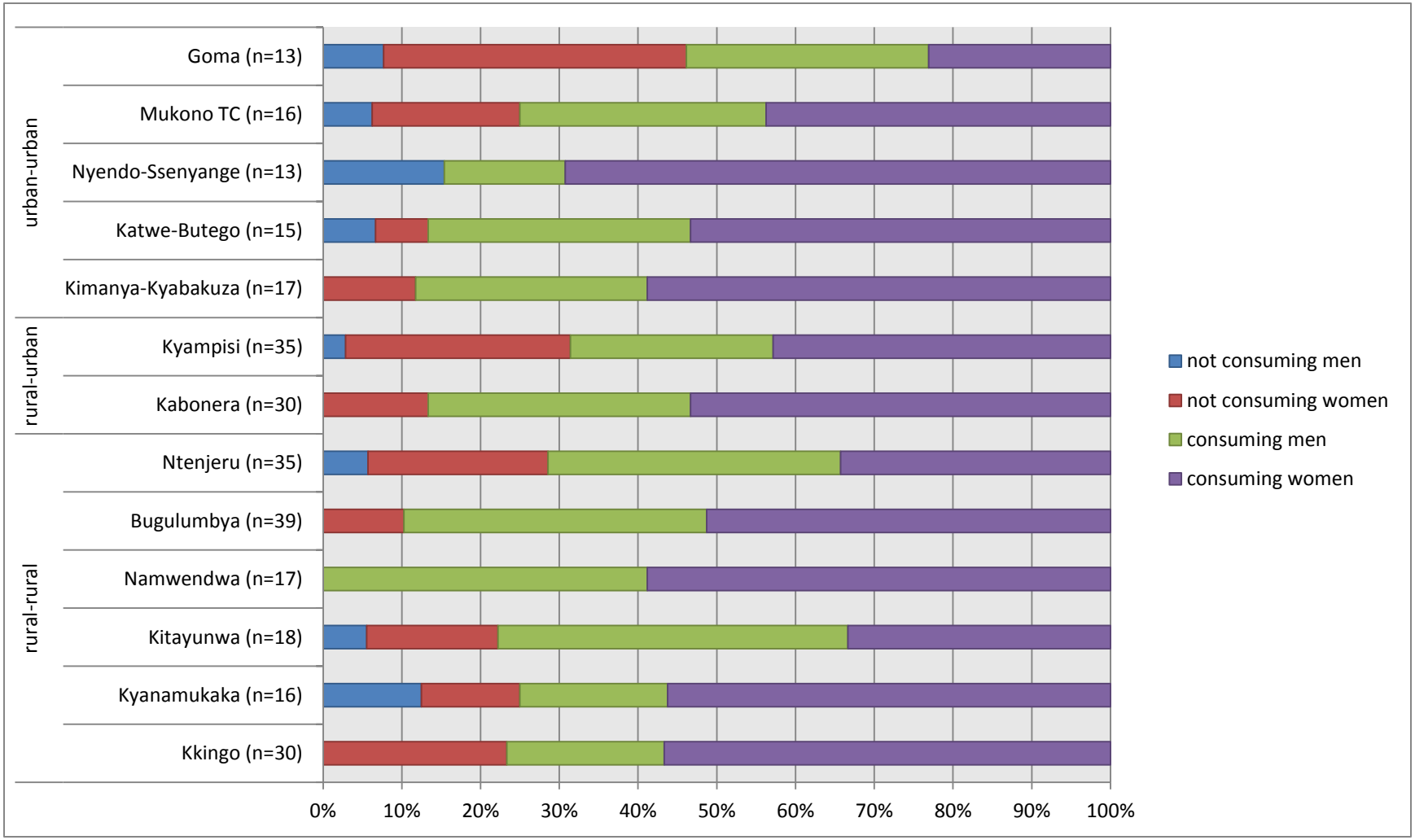
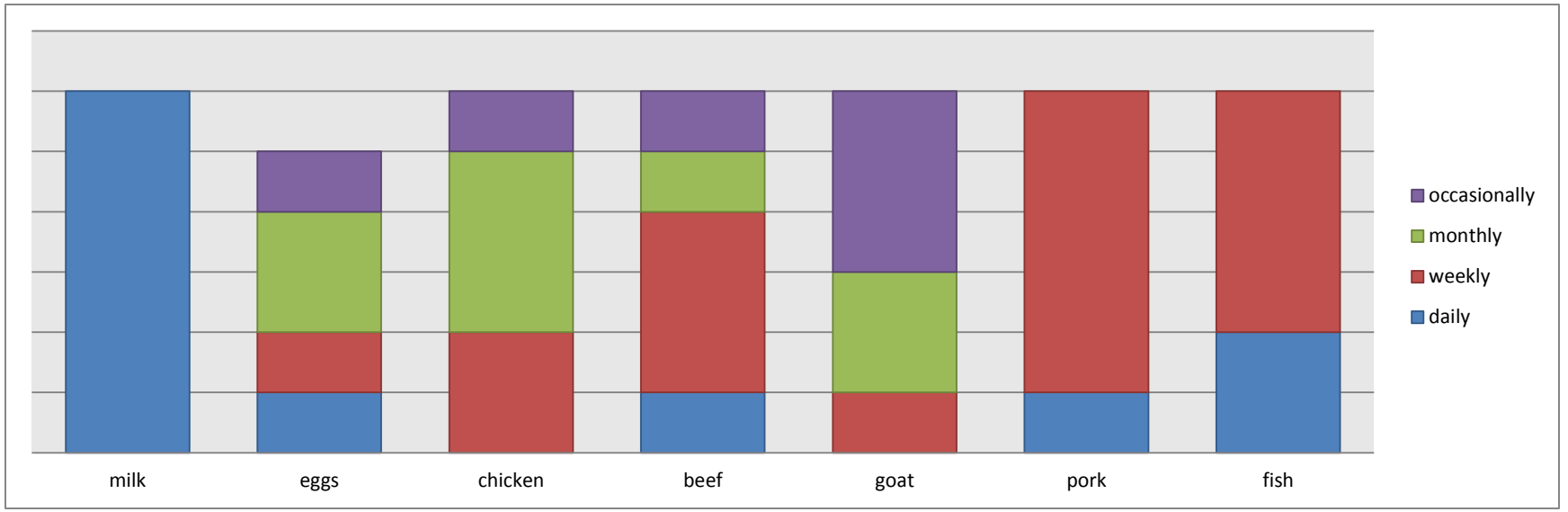
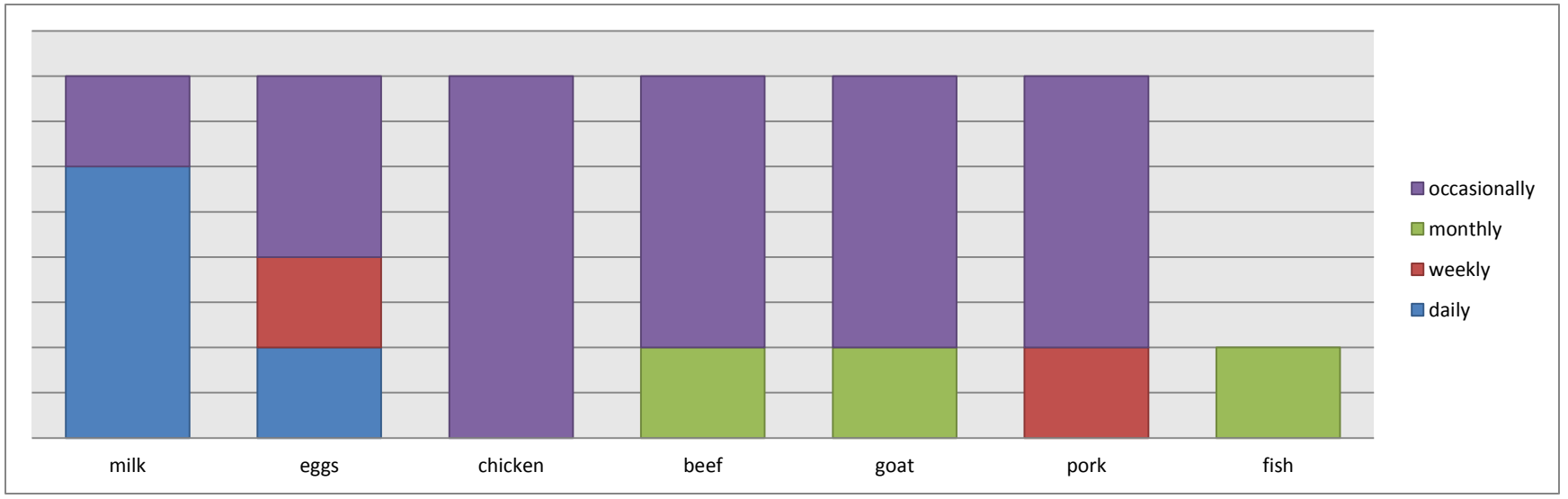


Who eats pork?



The role of pigs in the diet quality (Mukono vs. Kamuli)

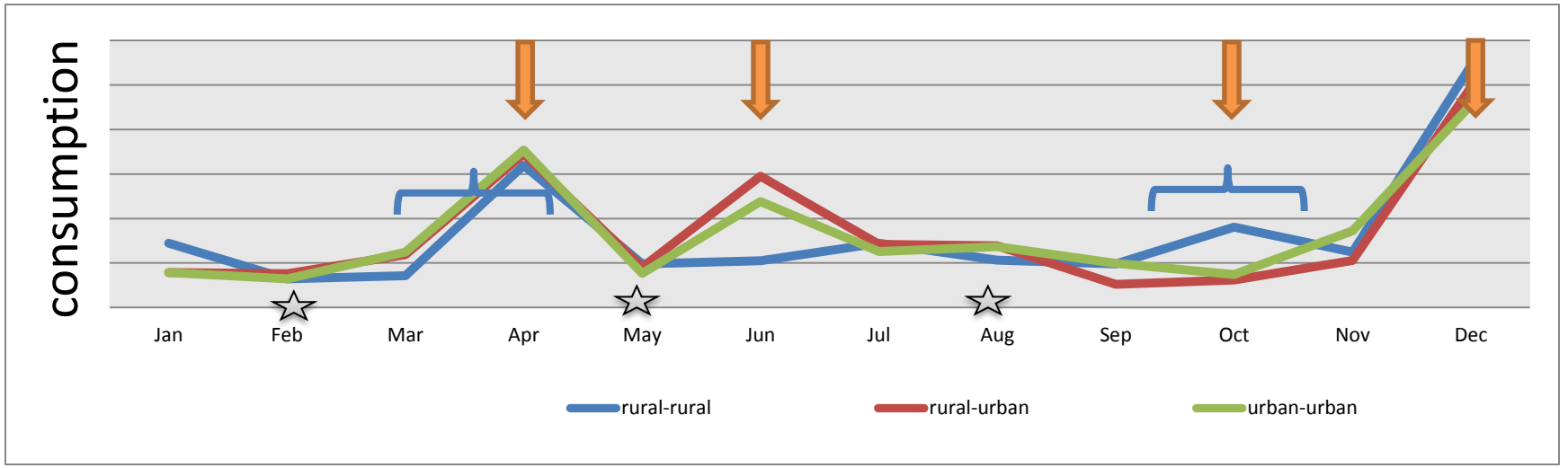


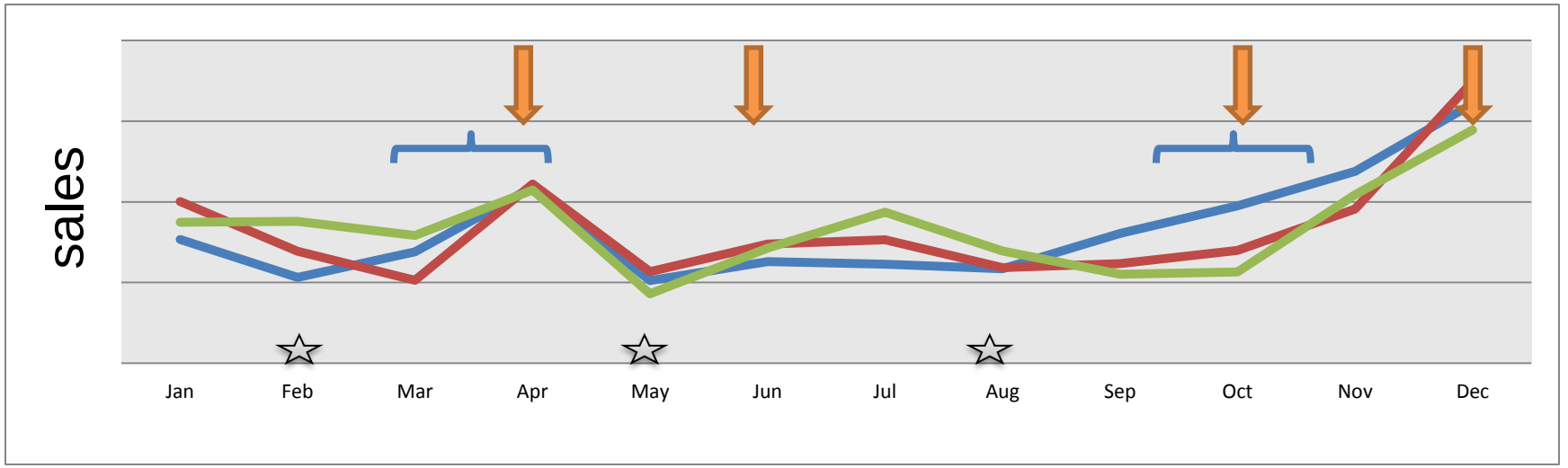


Seasonality of pork consumption?

- Yes, driven by festivals:
  - Christmas
  - Easter
  - Uganda Martyr's Day (June 3)
  - Independence Day (October 9)
- seasonal weather changes:
  - Dry season = season of swine disease outbreaks
- Seasonal cash availability:
  - School fees (February, May, August)
  - Coffee/maize harvest (June, July, November, December)

Drivers of pork consumption





Are pig feeds competing with human food?

- Not in the assessment sites, even though feeds were identified as a major constraint for producing more pigs
- Farmers try and sell stock after fattening them in "times of plenty" (during/shortly after the rains)
    - kitchen scraps (peels from cassava or potatoes, *matooke* or *posho* leftovers)
    - Tubers (Irish potatoes, sweet potatoes, cassava)
    - Fruits (avocado, sweet bananas, jackfruit, mango, papaya)

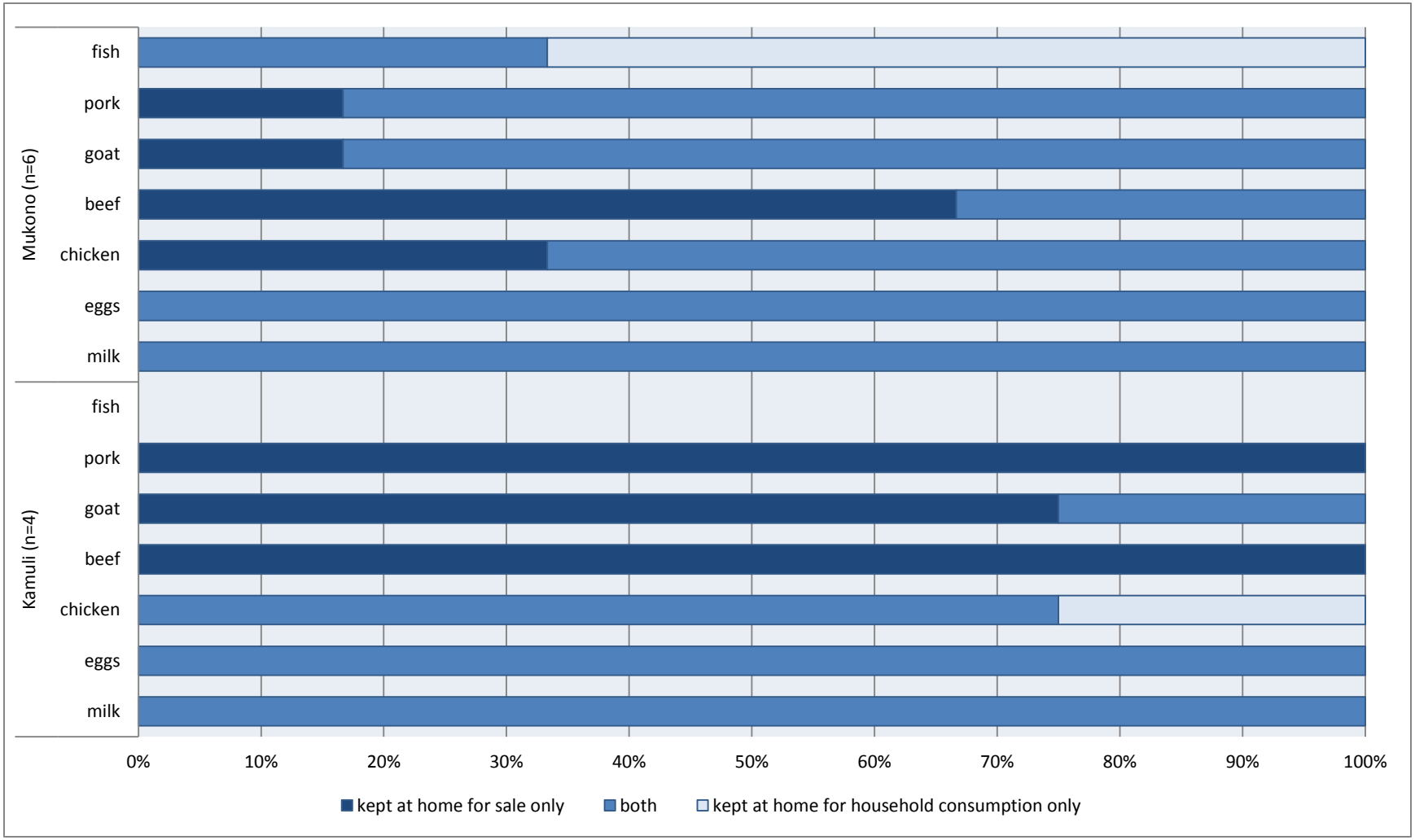
Reasons for eating (more) pork?

- Money: “The rich eat more because they can eat whatever they want whenever they want”
- “Eating pork clears the skin” (Mukono)
- “Eating pork (and bone marrow) makes strong bones” (Masaka)
- “Eating pork cures measles in children caused by eating goats meat” (Kamuli)

Reasons for not eating pork?

- Religion:
  - Muslims; SDA; Born again (Masaka): “pigs are for demons”
- Traditional religions:
  - Abaswezi (Kamuli) don’t eat eggplant, fish and pork
  - Abaana Banabawanuka (Kamuli) don’t eat pork
  - Bamasiya (Kamuli) don’t eat anything that produces blood (vegetarians?)
- Beliefs:
  - Pregnant women must not eat pork or “the child might have a mouth like a pig” (Masaka)
  - If children eat meat “they might delay speaking” (Masaka)
  - If children eat offal “they might become dumb” (Masaka)

Are livestock keepers livestock eaters?



Butchery wa Anthony:

- Clean meat and clean butcher man
- Organized place
- Not a pork joint
- Fair price (6,000 UGX per kg)

Butchery Mukono:

- Along the main way
- Clean meat and butcher man
- Organized
- Not a pork joint
- Fair price (6,000 kg UGX per kg)

5km 4 3 2 1 0.5

Butchery/ pork joint Nasuti:

- Relative clean
- Good price
- near

Butchery Mukilangila:

- Dirty meat, dirty butcher man
- Drunkards that maintain obscene words

Butchery/ pork joint industrial area:

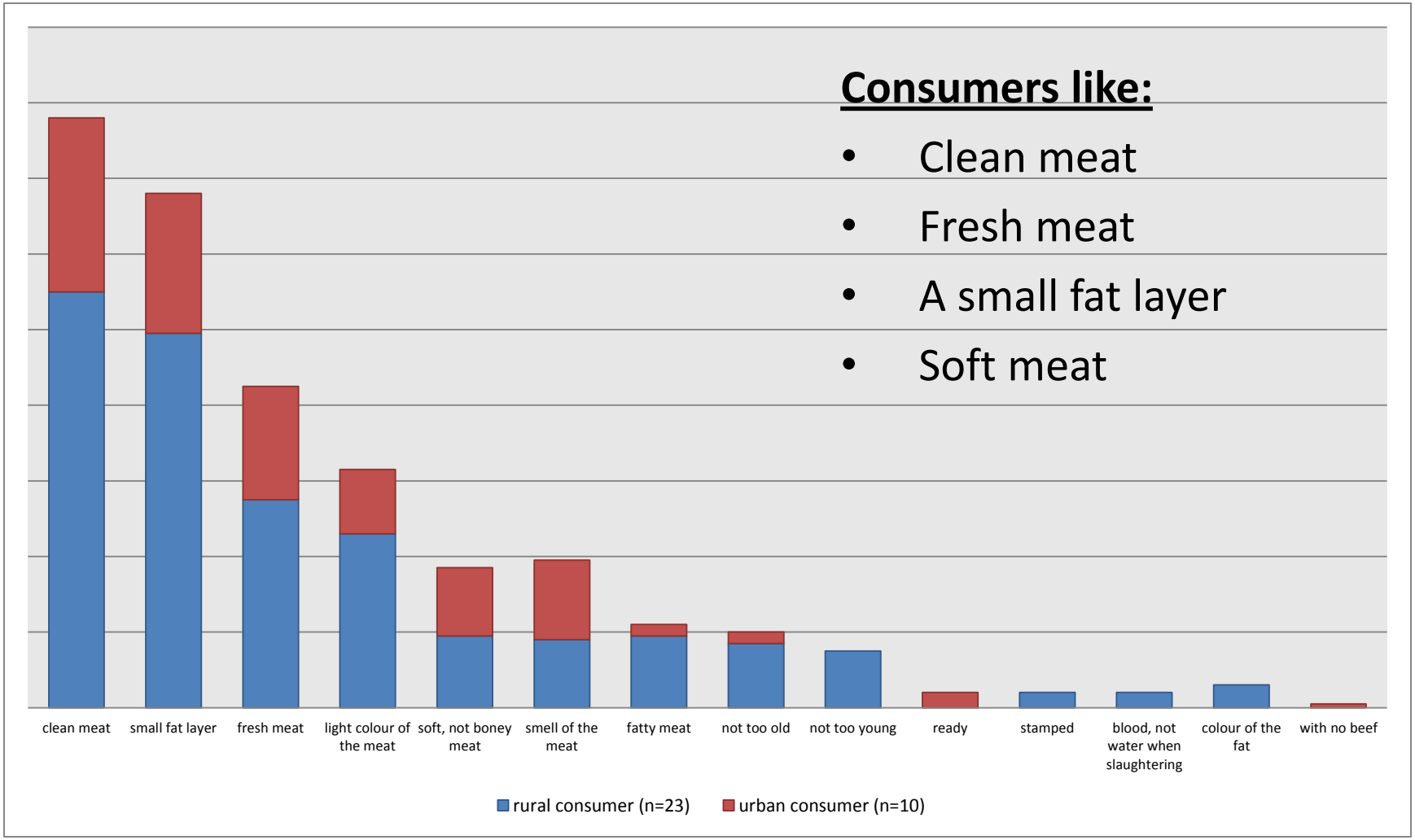
- Relative clean
- Good price
- near

Butchery/ pork joint Nakabago:

- Relative clean
- Good price
- near

Kitete, Mukono TC

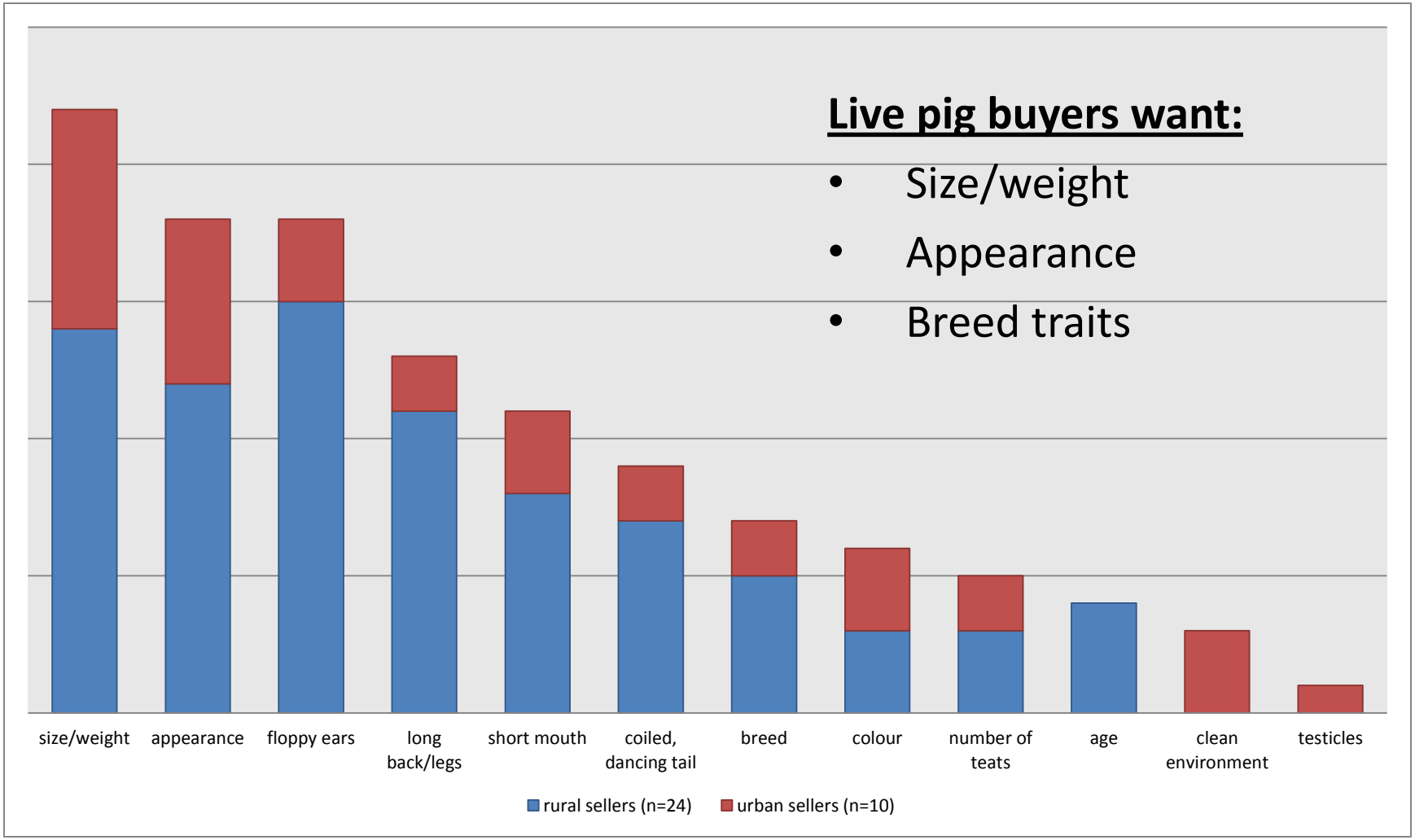
Quality attributes for pork (consumer)



Reasons not to buy pork (consumers)

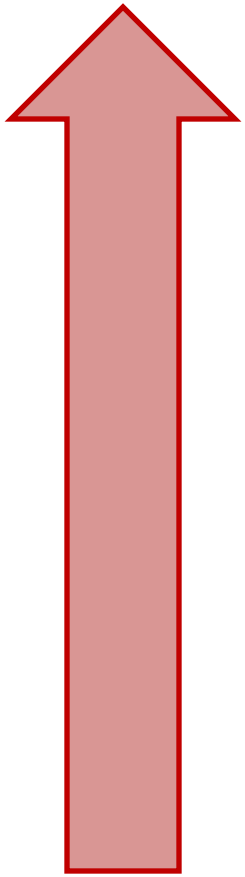
- Meat not clean
- Bad smell of meat
- Reddish/green colour
- Dirty butchers
- No fat/too much fat
- Pig was too old/too young
- (pork was in the fridge)

Quality attributes for live pigs (traders)



Summary: practices increasing the risk of zoonotic diseases

- Misinterpreting signs in live pigs
- Misbeliefs about food
- Sales of pigs in case of a local disease outbreak
- Presence of arthropod vectors
- Lack of on-farm and off-farm disease surveillance exposes slaughter staff, pork handlers including housewives to disease
- Poor feed storage might compromise pork safety
- Some traditional preservation measures
- Eating pork with raw vegetables



Summary: practices mitigating risk of zoonotic diseases

- Better slaughter practices in rural sites than in urban slaughterhouse
- Awareness of diseases transmitted from pigs/pork to people – no raw meat consumption
- Thorough cooking, reheating

1 kg of pork is brought home

6:00 P.M.

Cut into small pieces

6:30 P.M.

Pork into sauce pan, add water, light fire and boil until the water is finished

6:35 P.M.

Fry until the meat turns brown

7:00 P.M.

add ingredients, water and keep cooking

7:20 P.M.

Serve for supper

8:00-9:00 P.M.

Cut into small pieces

6:30 P.M.

Apply salt, put in sauce pan and fry until it turns brown to release the fat

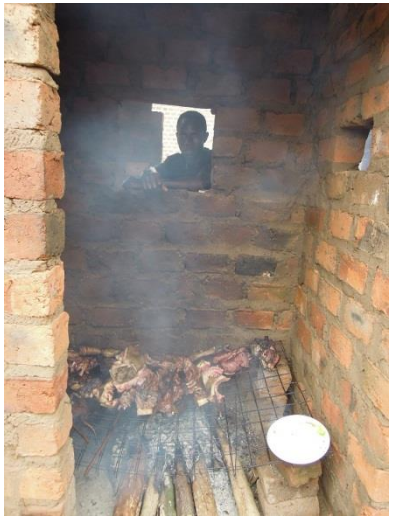
6:35 P.M.

Add ingredients and water and boil

6:55 P.M.

Serve for supper

8:00 P.M.



Some opportunities

- Training of butchers: good slaughtering practices, detection of (zoonotic) diseases for both food safety and disease surveillance
- Develop a meat inspection protocol feasible for the Ugandan context
- Explore possibilities of using traditional medicine for prevention of pig parasites

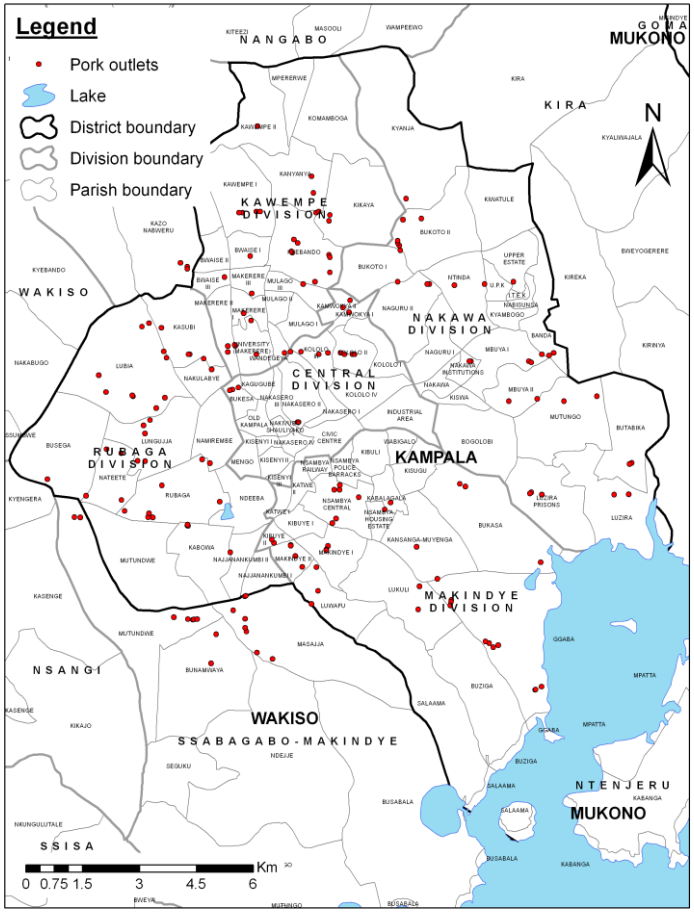
Complementary studies in Uganda:

- Descriptive study of slaughter hygiene at only formal slaughterhouse in Kampala

Complementary studies in Uganda

- Descriptive study of slaughter hygiene at only formal slaughter house in Kampala
- Mapping of pork outlets in Kampala and rapid assessment of hygiene

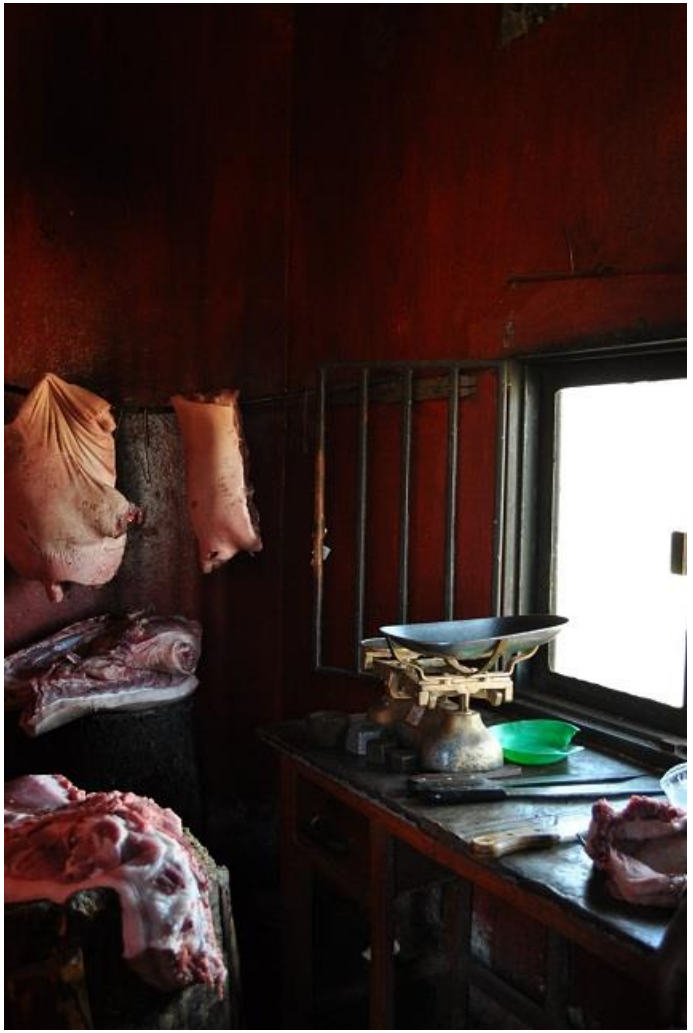
Hygiene practices in pork sales outlets in Kampala (1)



- To identify and map pork retail outlets in the 5 divisions of Kampala city: 158 retail outlets identified and geo-referenced
- Distributed uniformly (pork largely consumed)

Hygiene practices in pork sales outlets in Kampala (2)

- Short questionnaire and observation checklist
- Approx. 50% of the pork bought from ungazetted slaughter places (no inspection)
- Basic hygiene requirements are met (source of clean water, use of hot water and sanitizer, cold storage facilities)
- Lack of facilities for blood and waste disposal
- A few butchers had a certificate to allow them meat handling
- Need for training and standards at pork joints
- Need for more gazetted slaughter places to provide inspection



Complementary studies in Uganda

- Descriptive study of slaughter hygiene at only formal slaughter house in Kampala
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- Systematic literature review of food safety and zoonotic hazards in the pig value chain in Uganda

Systematic literature review of food safety and zoonotic hazards in the pig value chain in Uganda

- First ever systematic literature on pig/ pork zoonoses including food borne
- March/April 2013 using the template for a SLR developed under SFFF/RIA
- 82 out of 2838 initial articles reviewed on hazard investigated, year, location, sample size, husbandry type, climate, tests used and prevalence, risk factors, impact and control measures
- Some studies on trypanosomiasis (pigs as reservoirs for HAT), only one study on *Mycobacterium bovis* in pigs and a few on non-tuberculous Mycobacteria in pigs;
- Several prevalence/ risk factor studies on porcine cysticercosis
- Few studies on *Trichuris suis* and *Ascaris suum*
- One study on Ndumu virus (first found in Uganda)

So far no information on:

- *Alaria alata*
- *Ancylostoma* spp.
- Anthrax
- Blue pork
- Brucellosis
- *Campylobacter*
- *Coxiella burnetii* (Q-fever)
- *Cryptosporidium*
- Ebola
- Toxigenic *E. coli*
- Ectoparasites
- *Erysipelothrix rhusiopathiae*
- *Giardia duodenalis*
- Hepatitis E
- Influenza
- Mycotoxins
- Pesticide and vet drug residues
- Rabies
- Relapsing fever
- *Salmonella*
- *Sarcocystis suihominis*
- *Streptococcus suis*
- *Taenia hydatigena*
- *Toxoplasma gondii*
- *Trichinella* spp.
- *Y. enterocolitica*
- Heavy metals
- Leptospirosis

Complementary studies in Uganda

- Descriptive study of slaughter hygiene at only formal slaughter house in Kampala
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- Systematic literature review of food safety and zoonotic hazards in the pig value chain in Uganda
- Ebola risk assessment in the pig value chain in Uganda
- Situational analysis of food safety (on-going)

Complementary studies in Uganda:

- Descriptive study of slaughter hygiene at only formal slaughter house in Kampala
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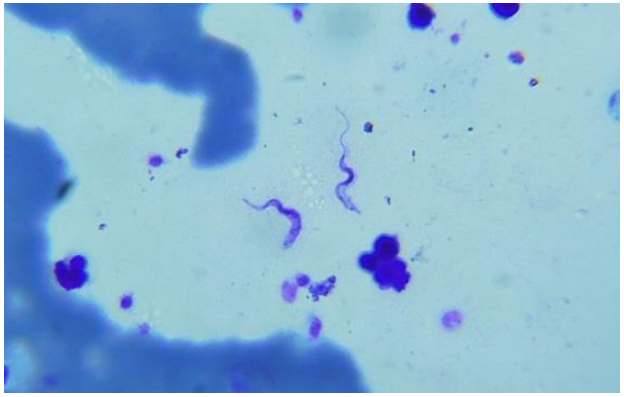
- Systematic literature review of food safety and zoonotic hazards in the pig value chain in Uganda
- Ebola Risk Assessment in the Pig Value Chain in Uganda
- Situational analysis of food safety (on-going)
- 4 postgraduate projects: salmonellosis, brucellosis, *Taenia solium*, endo- and ecto-parasites

On-going:
Quantitative risk assessment

- Sampling of 1200 pigs and administering farm questionnaires (animal health, food safety)
- Real time detection of internal parasites
- Questionnaires value chain actors
- Pork sampling



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