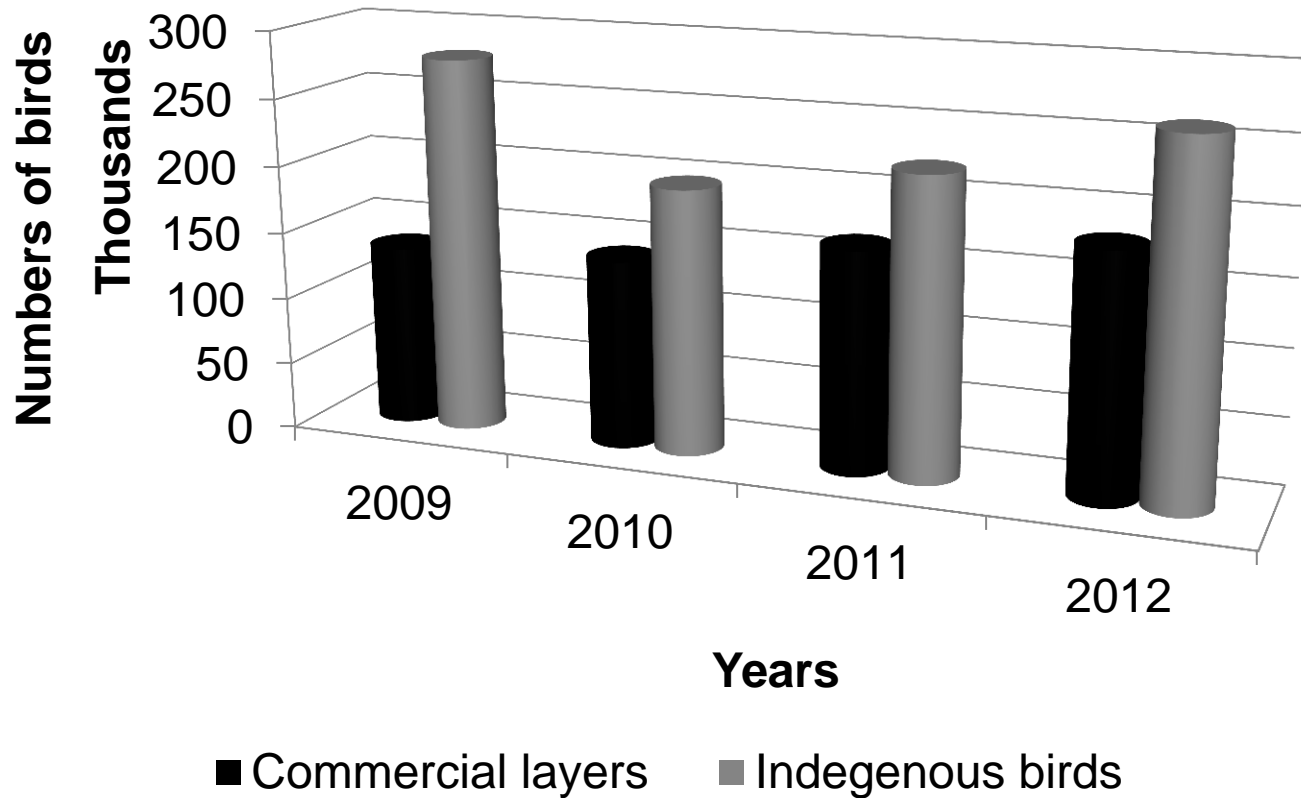


Population of layer birds in Nairobi



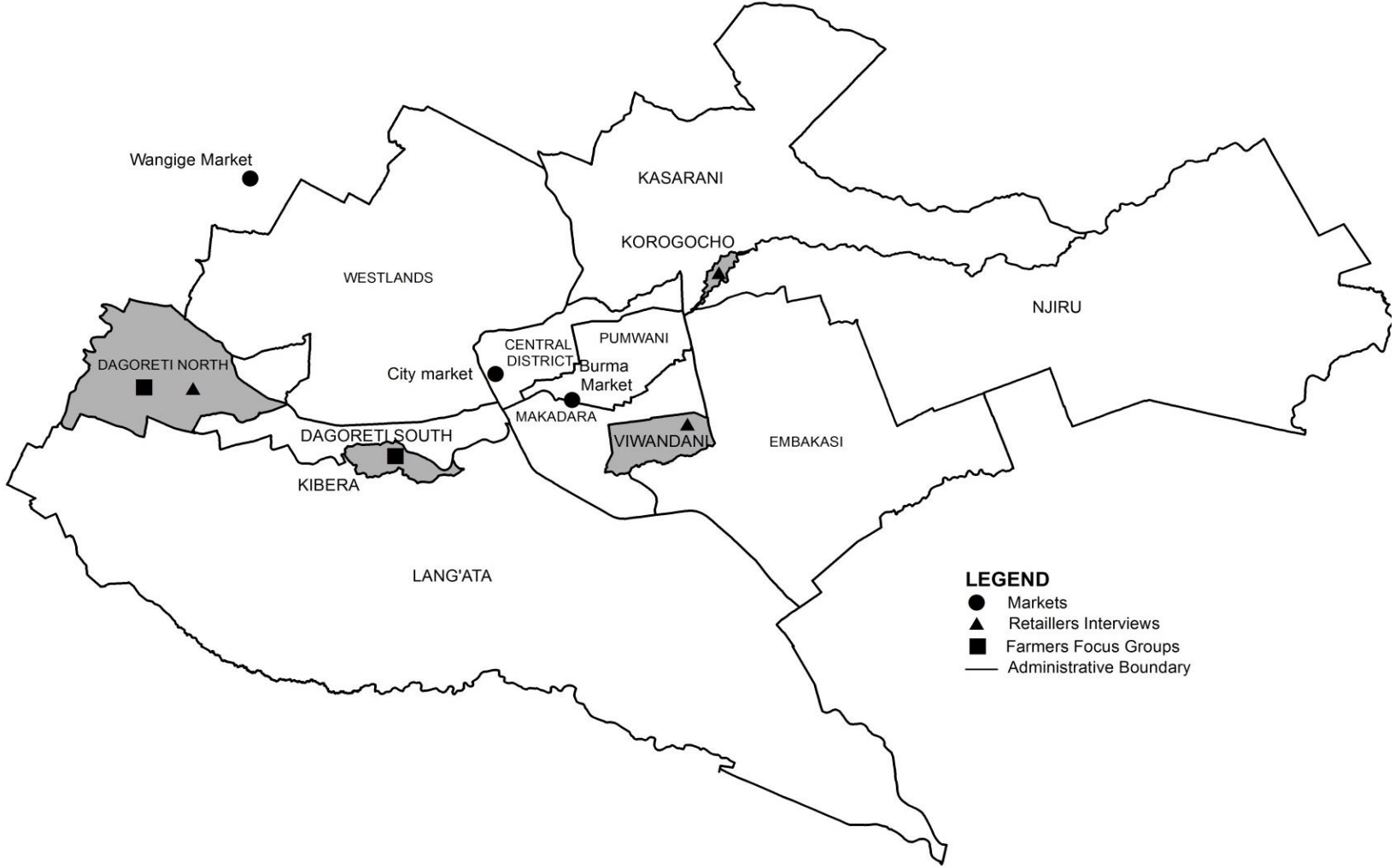
There is a need for better **understanding of flow** of inputs and outputs between these systems to **identify and target disease risks.**

Objectives

The objective was to map profiles of value chains for products and by-products from commercial layers and indigenous birds within the City of Nairobi.



Materials and methods – Study areas



acti diarrhoea location directly existing UPU form change resistance collected provide focus take Environ heal pathogen pathogenic within future transmission ecological isolates particulate Research demand area chain management MCH diversity pathogen pathogenic increase partners cities demand entrepreneur .C.I.I. activity one informal team hand policy contact likely risk important work analysis including novel understanding along novel environmental also UoN PI markers environmental cover

Materials and methods – Data collection

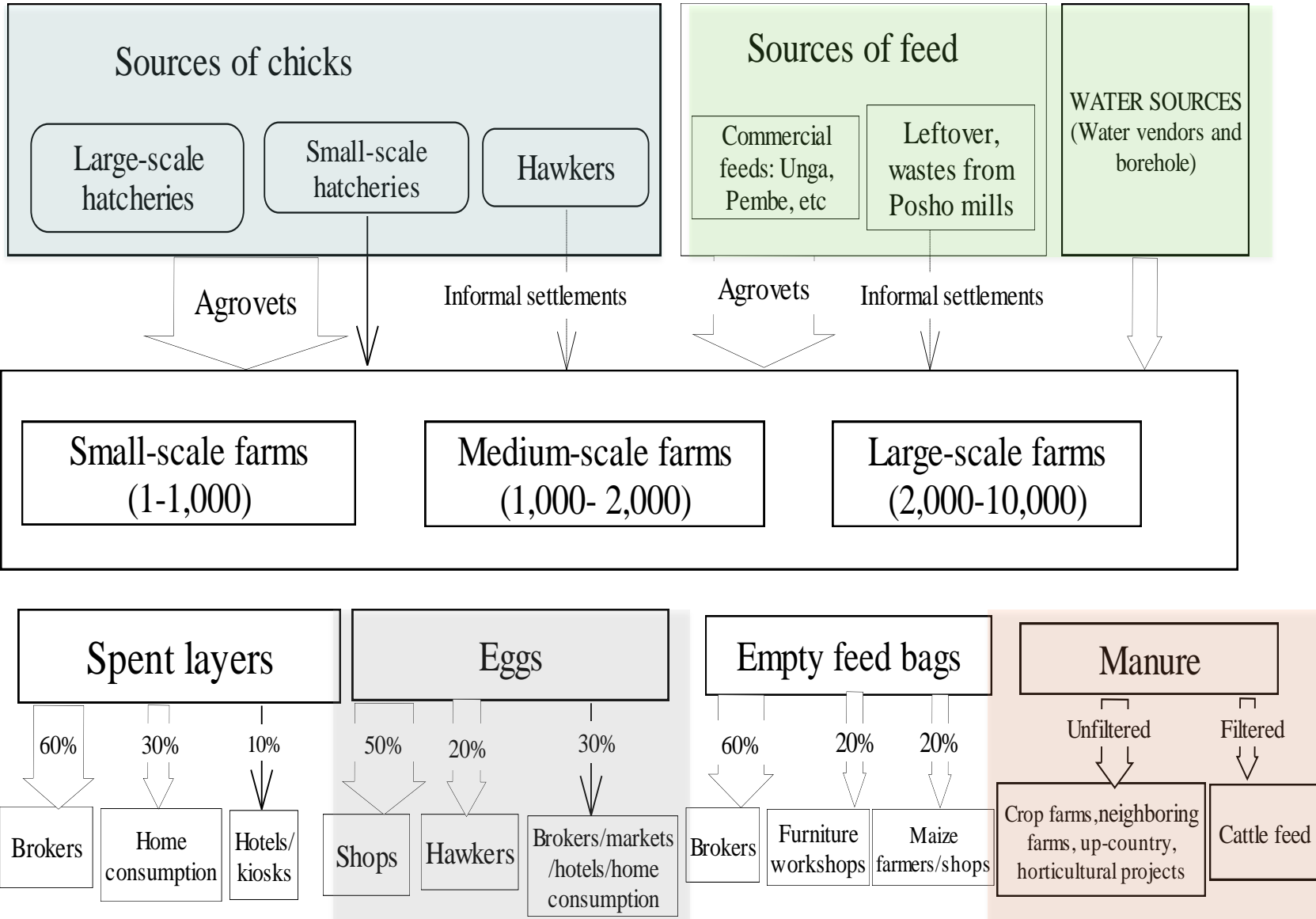
- **Focus group discussions with poultry farmers: layers, Indigenous birds.**
 - **Inputs** (day old chicks, mature birds, water, veterinary care, feed);
 - **Outputs** (products, buyers, farm gate prices).
 - **Challenges** of poultry production, disease and food safety risk.
- **Key informant interviews with extension officers**
 - Triangulation of information

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Materials and methods – Data analysis

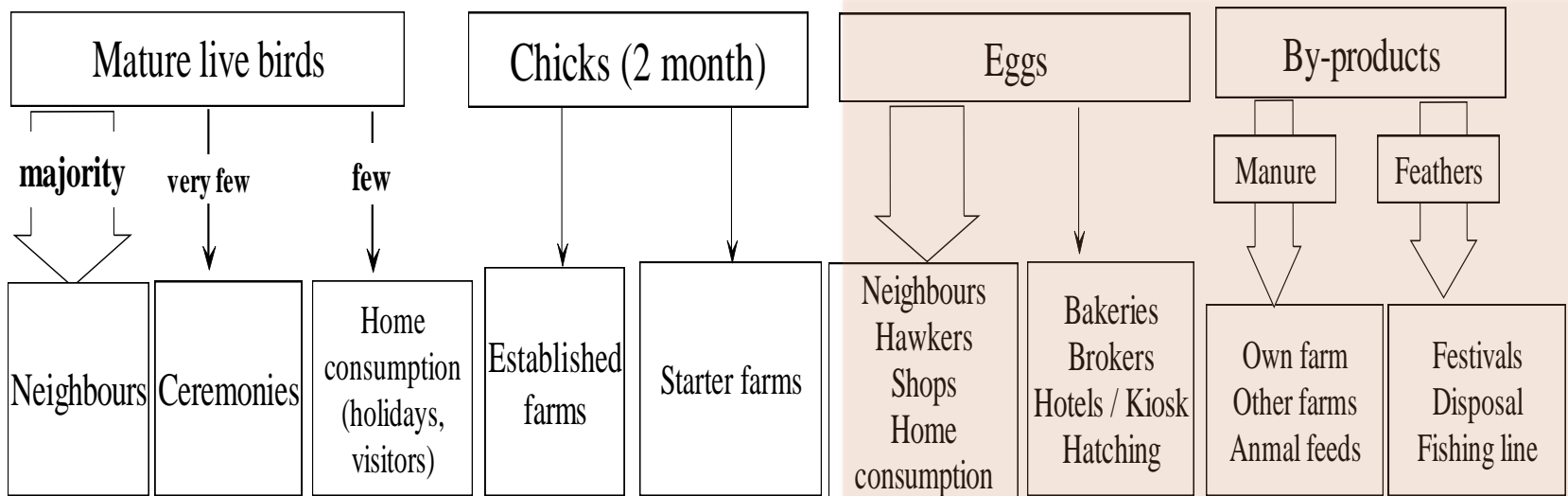
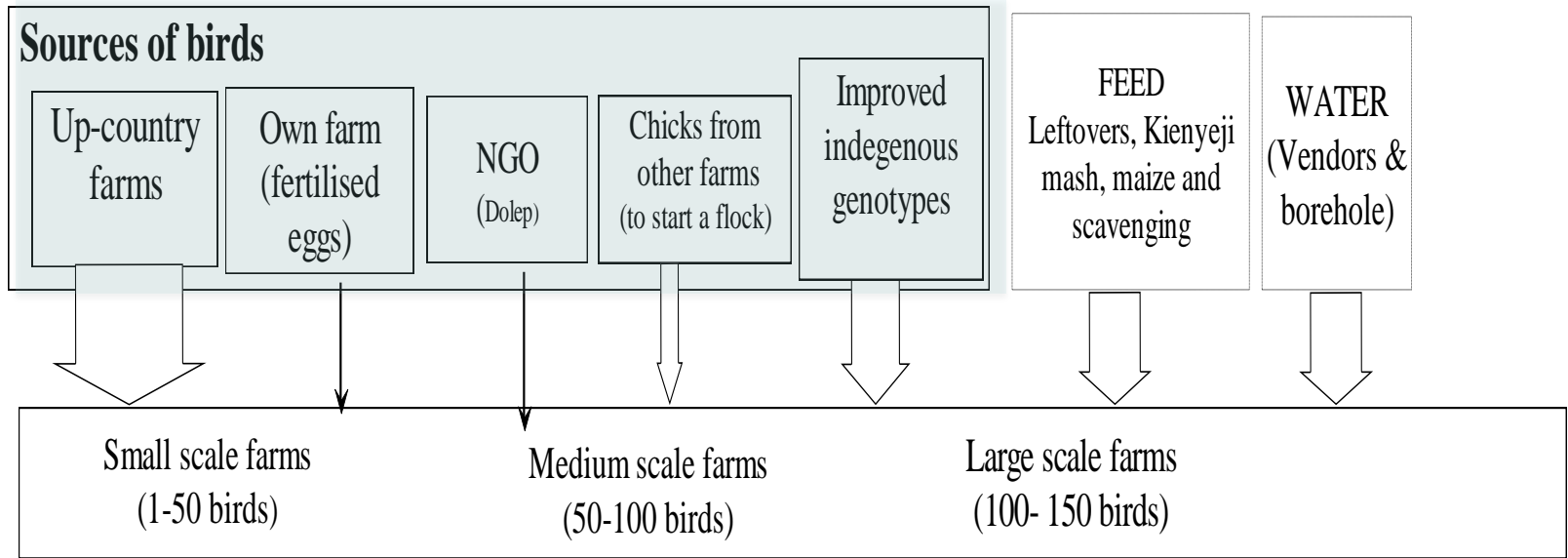
- Mapping the chain for each system
 - Interaction between value chain actors
 - Flow of products and inputs.
 - Qualitative description of risk practises
- Ranking challenges using non-parametric methods (Kruskal Wallis One way Anova).

Results: Commercial layer profile



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Results: Indigenous bird's profile



Results: type of eggs destination

Types of eggs

Small egg size



Eggs with yellow yolk



Eggs with cracked shell



Eggs with weaker shells



Retailer type

Brokers who mixes with bigger eggs

Restaurants and kiosks

Hawkers, neighbouring households

Hawkers, neighbours households



Results: strategies for handling sick and dead birds

<u>System</u>	<u>Peri-urban areas</u>	<u>Informal settlements</u>
Commercial layers	<ul style="list-style-type: none">• Seek advice from veterinarians, hatcheries• Isolation of sick birds• Slaughter before bird dies• Take the sick birds to agrovets and seek advice on treatment of those remaining in flock• Dead birds are boiled and fed to dogs	<ul style="list-style-type: none">• Burying dead birds• Given to garbage collectors• Home consumption• Slaughter before birds die• Disposal in public dumping sites
Indigenous layers	<ul style="list-style-type: none">• Burying dead birds• Taken to “agrovets” for advice on how to treat those remaining in flocks	<ul style="list-style-type: none">• Slaughter before sick bird dies• Home consumption• Burning of dead birds



Results: Challenges of layer production

Barriers for layer production	Commercial farms (Mean sum ranks)	Indigenous farms (Mean sum ranks)
Availability & quality of feed	108.1 (2.6)*	130.5 (3.2)*
Occurrence of diseases	107.0 (2.4)*	134.8 (3.5)*
Price volatility	87.9 (0.6)	111.1 (1.4)
Water availability	82.7 (0.1)	85.8 (-0.8)
Competition from producers	80.2 (-0.1)	86.7 (-0.8)
Land for expansion	76.9 (-0.4)	89.6 (-0.5)
Transport costs to markets	74.9 (-0.6)	61.3 (-3.0)
Seasonality of poultry markets	66.2 (-1.5)	89.1 (-0.5)
Harassment by County staff	49.6 (-3.1)	66.3 (-2.6)

() Numbers in parenthesis are Z-scores


* significant



Conclusion

- Value chains framework which have been described are useful for:
 - Findings are important for assessment of zoonotic pathogen and risk of their spread within the urban areas and in similar settings
 - Value chain framework provides some context in which public health officers and veterinarians can formulate policies for control of zoonoses.
 - Limited value addition activities along poultry value chains (layers and indigenous birds).

Results: Farmers knowledge of diseases affecting flocks



System	Peri-urban areas	Informal settlements
Commercial layers	coccidiosis; diarrhoea; infectious bursal disease; Mareks disease; Newcastle disease; worm infestations	calcium deficiency; cannibalism; respiratory problems; foreign bodies; swollen eyelids; coccidiosis; Newcastle disease
Indigenous layers	coccidiosis; diarrhoea; flea infestation; sick bird syndrome	diarrhoea; coughing; swollen eyelids; swollen necks