

2017 One Health Aotearoa Symposium

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One Science and Social Policy/One Health

Food safety and zoonoses in Tanzania's meat value chain: Experiences and expectations in butcherries and eateries

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Researching zoonoses

Zoonoses attract many funders and researchers

- Zoonoses and Emerging Livestock Systems (ZELS) brings together 6 donor agencies: £ 20.5 million (\$40m)



- 49 research institutes
- 10 countries in Africa, Sth Asia
- 11 research projects

- One project is HAZEL: investigating **H**azards **A**ssociated with **Z**oonotic pathogens in Emerging Livestock meat pathways...
- 5 Tanzanian institutes and 5 overseas institutes
- over Jan 2015 – Jun 2018 period

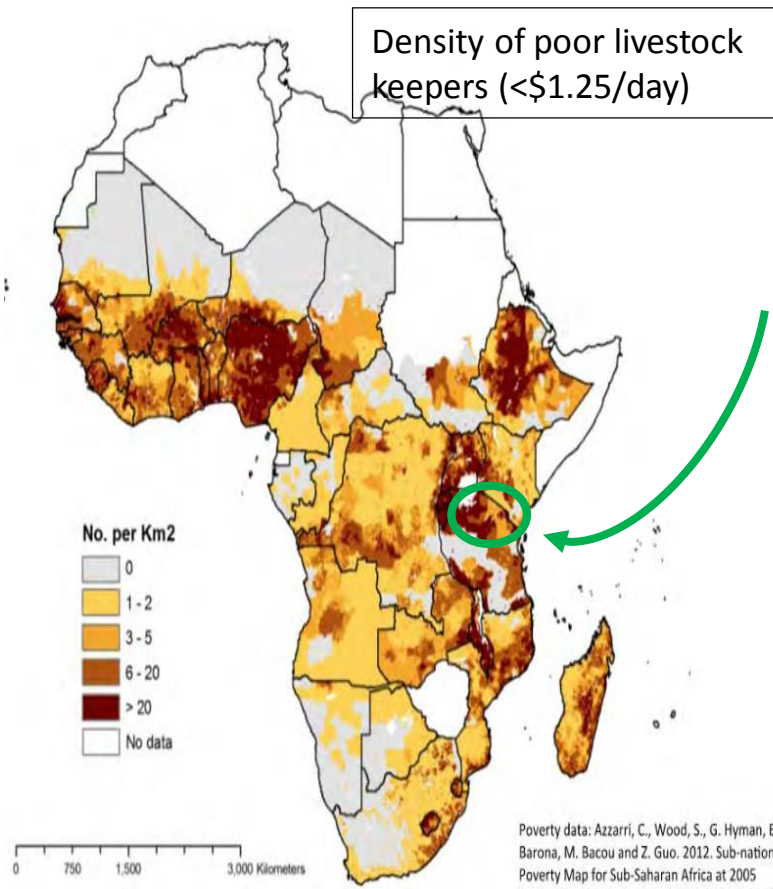


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Research objectives

HAZEL

Understand how zoonotic enteric pathogens – *Salmonella* and *Campylobacter* – flow through meat chain in Northern Tanzania:

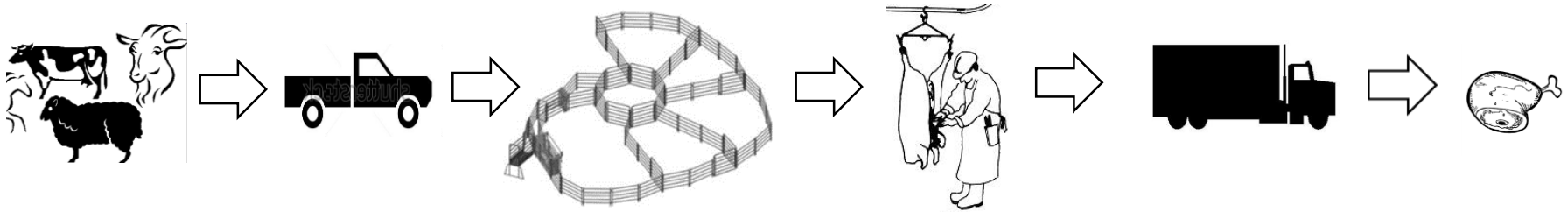


Specific objectives

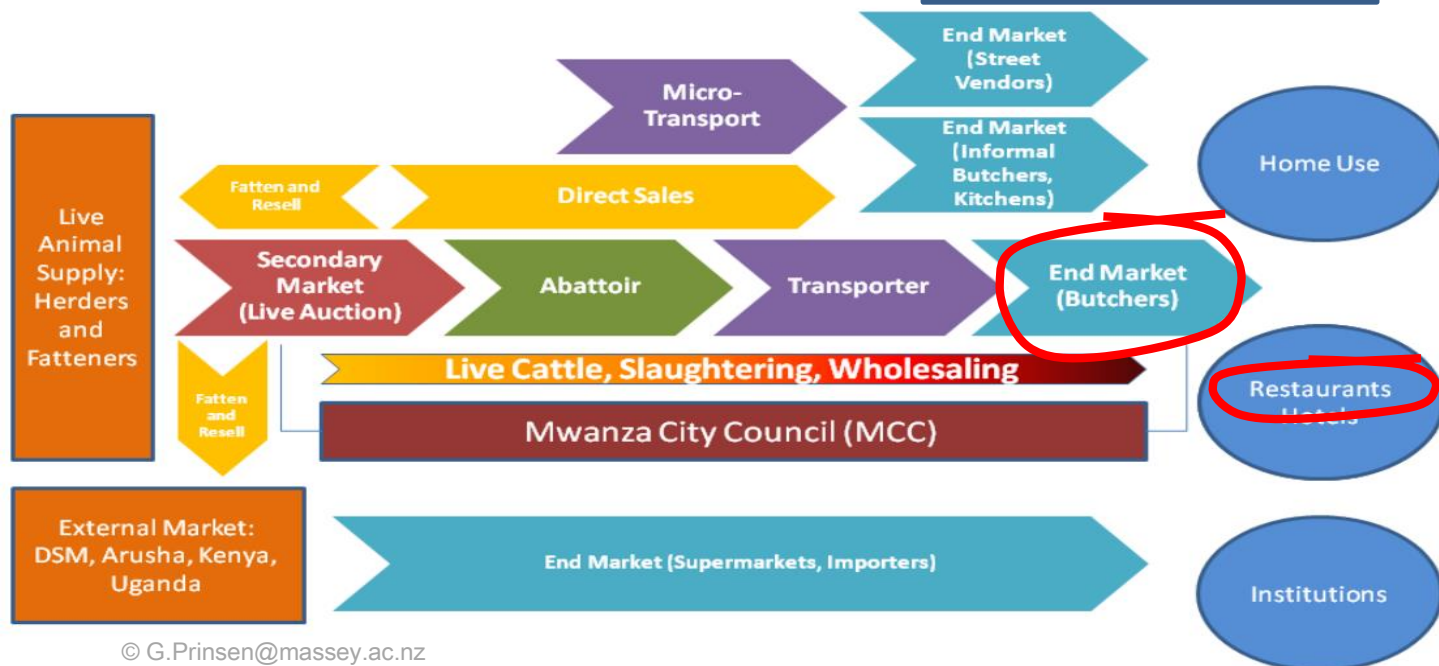
- Describe meat value chain (cattle, sheep, goats) from ‘beast to bowel’
- Establish where contamination most likely occurs or amplifies
- Determine where and how social/market policy interventions would be most effective and acceptable

Meat pathways and meat value chains

In its essential form a **meat pathway** looks like this:



In Tanzania, some have described the **meat value chain** as:



(SNV, 2012: 4)



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What does a butchery in Northern Tanzania look like?



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Methodology

- Semi-structured interviews (15 questions)
- Non-participant binary observation (14 items)

Sample (T=64)

	Urban	Rural
Butcheries	17	15
Eateries	17	15



Locations	Moshi Municipal Council (urban), Moshi District Council (rural)
Size	About 5% of rural district's butchers included. Others unknown.
Partial randomisation	Five wards in each council randomly selected. Within those wards, local authorities advised on actual interviewees.

Who runs butcheries and eateries?

Gender

- Running a butchery seems an exclusively male domain.
- However, about one third of the urban and rural eateries are run by women.

	Gender			
	Urban		Rural	
	Men	Women	Men	Women
Butcheries	100%	-	100%	-
Eateries	71%	29%	66%	33%



Who runs butcheries and eateries?

Experience

- Majorities of urban and rural butchers have been in business for more than six years – often decades; a life-time career.
- In contrast; about half the people running *urban* eateries have less than three years – often only months. A transient livelihood.
- Yet, most *rural* eateries are also managed for more than six years.

	Experience in the business							
	Urban				Rural			
	<3 years	3-6 years	>6 years	na	<3 years	3-6 years	>6 years	na
Butcheries	6%	24%	71%	-	7%	13%	60%	20%
Eateries	47%	18%	35%	-	20%	13%	53%	13%



What are meat sellers' *experiences* with food safety?

- Large and evenly distributed majorities of butcheries and eateries state they have not experienced any major food safety events.

Have you ever had a major event or problem with meat safety?						
	Urban			Rural		
	No, never	Yes, we had a major problem	na	No, never	Yes, we had a major problem	na
Butcheries	82%	18%	-	87%	13%	-
eateries	94%	6%	-	93%	7%	-

- When asked 'What prevents food safety problems?', people in *butcheries* tend to refer to external factors (inspectors, regulations) as often as an explanation as their own actions.
- In contrast, clear majorities people in *eateries* believe their own actions (cleanliness, selection, preparation) prevent problems more than external factors.



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What are meat sellers' *expectations* re food safety shocks?

- Views on future food safety are shared in similar proportions based on rural or urban location; not on operating butchery or eatery.
- Urban* butcheries and eateries are evenly divided on whether major problems will in- or decrease; about 40% each way.
- In contrast, clear majorities of *rural* butcheries and eateries believe major food safety problems will decrease; 60-73%.

What are your expectations regarding major problems with meat safety?								
	Urban				Rural			
	Problems will increase	Problems will decrease	Problems remain same	na	Problems will increase	Problems will decrease	Problems remain same	na
Butcheries	35%	41%	6%	18%	20%	73%	7%	-
Eateries	47%	41%	-	12%	27%	60%	13%	-



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What are meat sellers' *expectations* re food safety shocks?

- A list of 10 factors affecting food safety emerged from interviews in butcheries and eateries.
- There is no clear pattern of data distribution over the two types of business, nor over the two types of environments.
- The same factor could be reason for one interviewee to expect an increase in food safety shocks, while for another interviewee it led to expecting a decrease.

E.g. on the role of veterinary staff in risk expectations:



“The problems will decrease because now we have many veterinary officers.”

“You will see them writing reports. They are fake reports, cooked at their office desks.”



What are meat sellers' *expectations* re food safety shocks?

Factors affecting future food safety according butcheries and eateries

	Total frequency	Will increase food safety shocks	Will decrease food safety shocks
1. Veterinary staff practices	49	19	30
2. Livestock owners' practices	34	21	13
3. Veterinary medication	20	5	15
4. Butcheries' practices	17	11	6
5. Consumer awareness	14	9	5
6. Money issues for local actors	12	12	0
7. Eateries' practices	11	8	3
8. Wider eco-systemic changes	7	7	0
9. Cattle auctions' practices	7	5	2
10. Slaughter/abattoir practices	4	3	1



Conclusions re social sciences ❤️ molecular epidemiology

Collaboration works really well in two ways

1. In straightforward ways: in complex risk modelling

- E.g. social science findings on meat handling in butcheries and eateries feed into Modular Process Risk Model (MPRM) (Barker, French)

2. In complex ways: in practical application

- E.g. Let's suppose science lab research determines that cross-contamination risks are very high in eateries...

... *Without* social sciences, lab findings would advise training for chefs, mandatory kitchen equipment and compliance verification

... *With* social science research; (cost) effectiveness is:

- Prioritise rural eateries: lifelong livelihood + belief in own role
- Forget urban eateries (transient livelihoods)
- But acknowledge rural eateries think food safety risks decrease
- And be gender-aware in the approach: 1/3 are women

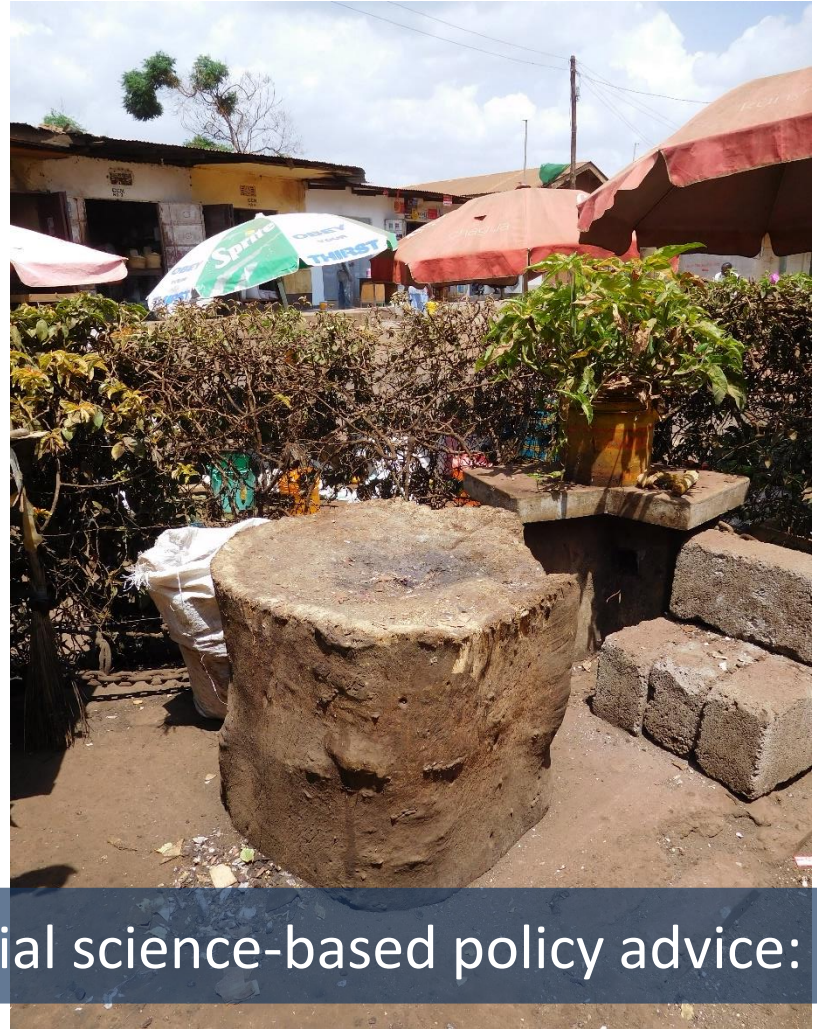


In a nutshell...

Lab-based policy advice:



Social science-based policy advice:



Thank you / *Asante sana*



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