Milk, meat and fish – more than just food
Current research on food safety in sub-Saharan Africa

Wiener Lebensmittelgespräche
Vetmeduni Vienna, Austria, 23 May 2014

Kristina Roesel,
International Livestock Research Institute (ILRI)
1. Who is ILRI?
2. Food safety in sub-Saharan Africa
3. ILRI research on food safety
Who is ILRI?

CGIAR global partnership for a food secure future

- Poverty alleviation through agricultural research
- 15 research centres
- Mission: *better lives through livestock!*

www.ilri.org
## Opportunities and challenges in the livestock sector

<table>
<thead>
<tr>
<th></th>
<th>Human health</th>
<th>Economies</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunities</strong></td>
<td>Population growth, food and nutrition security</td>
<td>Regional and global demand for livestock products</td>
<td>Manure, fertilizer, regenerative energies</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td>overconsumption, <strong>food safety</strong>, (emerging) zoonoses</td>
<td>Equity, urbanization, trans-boundary diseases</td>
<td>Land/water degradation, human-wildlife conflict, pollution, emissions</td>
</tr>
</tbody>
</table>

**Note:** The term **food safety** is highlighted to draw attention to its importance in the context of the document.
Research program on livestock & fish: more meat, milk and fish for and by the poor

R4D integrated to transform selected value chains in targeted commodities and countries.

To sustainably increase the productivity of small-scale livestock and fish systems to increase the availability and affordability of animal-source foods for poor consumers.
9 target livestock & fish value chains
Research program on Agriculture for nutrition & health

- Program led by IFPRI
- 4 components; ILRI is leading “prevention and control of agriculture-associated diseases”
  - Food borne diseases
  - Emerging infectious diseases
  - Neglected zoonoses
  - Ecohealth/ OneHealth

http://aghealth.wordpress.com/
Food safety in sub-Saharan Africa

- Worldwide per year
  >2 billion cases of diarrhea
  1.5 million deaths children <5

- 80% of child deaths due to diarrhea in South Asia and Africa

- Animal source foods are single most important source of food borne disease

- In sub-Saharan Africa >80% of animal source foods sold through informal markets

![Chart showing cases of various diseases per year](image-url)
1. **INFORMAL MARKETS**

have a major role in food security and

- < 39% of the national GDP
- Accessible and affordable to everyone
- Involve many actors
- No taxation, no licensing, no inspection
- Prone to activities that may compromise safety
- Perceived to be unsafe
2. HAZARDS are common but don’t always translate into RISK

• Hazards = any agent that can cause harm

• Risk = probability of that harm to occur + consequences

• Food safety management in developing countries is hazard-based and therefore inefficient
Most pork in Kampala is unsafe - health experts

By Robert Wamala

Kampala. Majority of pork supplied in Kampala for human consumption is contaminated, the KCCA and Ministry of Agriculture officials have said.

Dr Akuba has said pork contains tapeworms which cause epilepsy when consumed without being properly cooked and prepared.

A dozen pigs were carried away by more than 800 kilograms of fresh pork impounded.

Meanwhile, many many other people who have purchased the meat at different points around the city. In the recent past, it has become a profitable business to venture into.
Codex Alimentarius Commission framework for food safety risk assessment

Hazard identification
- Can it be present in food?
- Can it cause harm?

Hazard characterization
- What harm does it cause?
- How does harm depend on dose?

Exposure assessment
- How does it get from source to victim?
- What happens along the way?

Risk characterization
- What is the impact of the harm?
- What is its likelihood?

Risk management/Risk communication

Participatory methods fit well
3. Informal markets are not necessarily dangerous, nor formal safe

- Informally marketed food often safe
- Biggest challenges: improper harvest and post-harvest handling, often because of lack of prerequisites
- Business-oriented attitudes are a major risk to food safety
- Some risks in both markets are underestimated because they do not cause immediate harm
4. Farmers, traders and retailers are risk managers in informal markets

- Contamination of food may occur at any stage in the food chain
- Risk pathway analysis helps identifying CCPs
- Everybody handling and benefiting from the product, must take responsibility
- Interventions often simple but lack prerequisites
5. Understanding values and culture is crucial for managing food safety in informal markets.
Indigenous knowledge often contributes to food safety.

Eating food is not only for nourishment but also cultural.

Different beliefs about food safety risks.

Difficult to change risky traditional practices.

Some groups are more exposed.
6. Food safety management also requires a gender perspective
• Men and women dominate/are excluded from different segments of the food value chains
• Different benefits, different risks
• Different vulnerabilities (YOPIs)
• Informal markets are very important to women’s livelihoods
7. Efforts in managing food safety in informal markets must be pro-poor

- Poor more prone but cannot afford to fall ill
- Risk management needs training, skills development and prerequisites
- Linking formal and informal markets
- Impact assessment on economic losses and gains of food safety risks is needed
2 major ILRI activities on food safety in sub-Saharan Africa

1. **Safe Food, Fair Food:**
   risk-based approaches for food safety management in informal markets
   [http://safefoodfairfood.wordpress.com/](http://safefoodfairfood.wordpress.com/)

2. **MyDairy:**
   aflatoxins in dairy products
Safe Food, Fair Food

Improve livelihoods of poor producers and consumers

by reducing the health risks

and increasing the nutritional benefits associated with meat, milk and fish
Safe Food, Fair Food

- Risk assessment in selected 4 livestock value chains
- Testing of best-bet interventions
- Engage policy and upgrade university curricula
10 countries, 13 partners
MyDairy: measuring and mitigating risk of mycotoxins in maize and dairy

• Research focus on aflatoxins

• High levels in feeds and milk in Kenya

• Cause acute and chronic illness in people and animals (high rates of liver cancer)

• Economic losses from spoilage
1. Integrated risk and economic assessment of the Kenyan feed dairy chain
2. Technologies & practices for risk management of mycotoxins in the feed-dairy chain
3. Randomized control trial for low cost post-harvest technologies to reduce aflatoxins in maize among smallholder farmers
Partners

Funded by the Finnish Ministry of Foreign Affairs

• ACDI/VOCA
• International Food Policy Research Institute
• Jomo Kenyatta University of Agriculture and Technology
• AgriFood Research Finland (MTT)
• Rakuno Gakuen University, Japan
• University of Nairobi
Food Safety and Informal Markets
Animal Products in Sub-Saharan Africa

Edited by Kristina Roesel, Della Grace

Routledge – 2015 – 256 pages

Animal products are vital components of the diets and livelihoods of people across sub-Saharan Africa. They are frequently traded in local, unregulated markets and this can pose significant health risks. This volume presents an accessible overview of these issues in the context of food safety, zoonoses and public health, while at the same time maintaining fair and equitable livelihoods for poorer people across the continent.

The book includes a review of the key issues and 25 case studies of the meat, milk, egg and fish food sectors drawn from a wide range of countries in East, West and Southern Africa, as part of the “Safe Food, Fair Food” project. It describes a realistic analysis of food safety risk by developing a methodology of ‘participatory food safety risk assessment’, involving small-scale producers and consumers in the process of data collection in a data-poor environment often found in developing countries. This approach aims to ensure market access for poor producers, while adopting a realistic and pragmatic strategy for reducing the risk of food-borne diseases for consumers.
Acknowledgements

Our local and international partners

Our investment partners Federal Ministry for Economic Cooperation and Development, Germany and the Finnish Ministry of Foreign Affairs

and the CGIAR Research Program on Agriculture for Nutrition and Health (A4NH), led by the International Food Policy Research Institute.
THANK YOU!

Kristina Roesel  
Project coordinator “Safe Food, Fair Food”  
ILRI-Kampala  
k.roesel@cgiar.org

https://safefoodfairfood.wordpress.com/

Better lives through livestock  
www.ilri.org