International Livestock Research Institute

Training course report

Training on tools for a rapid integrated assessment of food safety and nutrition

20-22 November 2012
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Written by Kristina Roesel

Edited and formatted by Tezira Lore

**Citation**

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Project background

The training was part of integrated research between two projects led by the International Livestock Research Institute (ILRI):

1. Rapid integrated assessment (RIA) of potential benefits to human health and nutrition from research on livestock and fish market chains in Asia and Africa (funded by the Australian Centre for International Agricultural Research [ACIAR])

In developing countries, animal-source foods support the nutrition and livelihoods of millions of rural and urban poor for whom livestock and fish value chains are also promising pathways out of poverty. Less attention has been given to the relation between animal-source food value chains and human health and nutrition, especially impacts of foodborne disease and nutritional security. The CGIAR Research Program on Agriculture for Nutrition and Health (A4NH) is developing an impact pathway by which agriculture can enhance nutrition and mitigate health risks through value chain research. This requires new tools and approaches to prioritize which can be applied to informal markets in which quality and safety are diverse and where there can be trade-offs between income, employment, nutritional benefits and disease risks.

For these informal and emerging value chains, market access and income are as much an objective as the quality and safety of foods produced and consumed. Key questions to be answered include:

- Among the wide range of potential hazards associated with animal-source food products in informal systems, which are likely to have the greatest risks to human health?
- Which have the most impact in terms of limiting the availability of food critical to the nutritional security of the poor and constraining development of the value chain, particularly livelihood opportunities of the poor who produce or handle those products?
- What are the key constraints to the supply and demand of safe and nutritious foods?
- What are the potential health and nutrition benefits of research that seeks to overcome these risks and constraints?

Research objectives

1. Development of tools and approaches to assess value chains in relation to nutrition and health.
2. Assessment of food quality and safety research priorities in value chains with high potential for pro-poor transformation and of interest to CGIAR and the ACIAR.

The value chains were chosen for their ability to generate information to inform research and development; they are pork in Vietnam, dairy in Tanzania and fish in Egypt, together comprising one-third of the value chains targeted by the CGIAR Research Program on Livestock and Fish.

2. Safe Food, Fair Food project – Phase 2: From capacity building to implementation (funded by BMZ/GIZ)

Millions of small-scale farmers efficiently supply the great majority of the meat, milk and fish market in Africa. Surging demand for livestock products and changing consumer demands (the Livestock Revolution) provide an opportunity to set poor farmers on pathways out of poverty, but also threaten the continued presence of smallholder farmers in increasingly demanding markets. While the presence of food safety hazards (such as microbial pathogens and residues) in informally-marketed food is high, the risk to human health is mostly unknown and current food safety management is both ineffective and inequitable. Risk-based approaches for assessing and managing food safety offer a powerful new method for reducing the enormous health burden...
imposed by foodborne disease, while taking into account other societal goals such as pro-poor agri-food sector development and food and nutritional security.

The ultimate goal of this second phase of the Safe Food, Fair Food (SFFF) project is the improvement of livelihoods of poor producers and consumers by reducing the health risks and increasing the livelihood benefits associated with meat, milk and fish value chains. Its purpose is furthering research into the practical application of risk analysis and economic and social methods by food safety stakeholders and value chain actors, improving food safety and market participation of the poor in informal markets for livestock products in sub-Saharan Africa. The project contributes to this with outputs at two scales:

1. At the level of meat, milk and fish value chains, it will pioneer and test a practical, whole-value-chain application of risk-based approaches to food safety in selected countries which are the focus of the CGIAR Research Program on Livestock and Fish. It will develop, test and communicate the technologies and methods to improve food safety and enhance smallholder market access.

2. At regional scale, it will work through the food safety ‘champions’ supported in the first phase of the project to better incorporate risk analysis and economic valuation methods into food safety policy, commercial practice and veterinary education.

The second phase project works in four countries (Ethiopia, Senegal, Tanzania and Uganda) and with university and research networks and economic communities in East, West and southern Africa. It builds directly on the work of the previous phase that increased capacity and generated evidence for improving food safety in eight African countries, training over 50 food safety stakeholders and supporting 20 postgraduate research projects.
Training summary

Following the development of a generic toolkit for the animal health, food safety and nutrition components (project funded by ACIAR), we want to ensure the harmonized application throughout the value chains of the CGIAR Research Program on Livestock and Fish in the SFFF project countries (Ethiopia, Senegal, Tanzania and Uganda) and ACIAR project countries (Egypt, Tanzania and Vietnam). In Tanzania, the partners at Sokoine University of Agriculture (SUA) in Morogoro have already been heavily involved in the value chain assessment (funded by Irish Aid in the ‘More Milk in Tanzania’ project led by Amos Omore of ILRI).

For the assessment of food safety and nutrition, six graduate and postgraduate students at SUA were mobilized by project coordinator Lusato Kurwijila and his colleagues Anna Sikira and George Msalya. In the coming weeks, the team will collect qualitative and quantitative data using participatory rural appraisals, focus group discussions and questionnaires. Biological samples will be collected along with the metadata and the samples will be analyzed by two MSc students (both women) attached to the SFFF project.

The group was introduced to the context of the CGIAR Research Program on Livestock and Fish and the agriculture-associated diseases theme of the CGIAR Research Program on Agriculture for Nutrition and Health, and how the food safety projects are integrated into the value chain assessment. Moreover, it was explained why the food safety component was being done just a few months after the value chain assessment under the ‘More Milk in Tanzania’ project. Following the training on the tools, they were tested in the field with a group of smallholder farmers in Manza, a village that is not participating in the survey.

Organizer/co-organizers
- Lusato Kurwijila, SFFF coordinator at SUA
- George Msalya, animal scientist at SUA
- Anna Sikira, social scientist at SUA and consultant with the ‘More Milk in Tanzania’ project

Lecturers/facilitators
- Kristina Roesel (ILRI/Freie Universität Berlin)
- Kimberly Fornace (Royal Veterinary College)
- Mahmoud El Tholth (Royal Veterinary College and Kafr-El-Sheikh University, Egypt)
Agenda

Tuesday 20 November 2012

1. Introduction to context (Kristina)
   - CGIAR and ILRI
   - CGIAR Research Program on Livestock and Fish and CGIAR Research Program on Agriculture for Nutrition and Health
   - How the different projects are integrated: More Milk in Tanzania, SFFF and RIA
2. Introduction of conceptual framework on integrated assessment of food safety and nutrition (Kimberly)
3. Introduction to 'Book of the books', the set of tools for the rapid integrated assessment of food safety and nutrition (Kristina)
4. Training on qualitative tools: how to be a good facilitator, guides for participatory rural appraisals with dairy producers and consumers, guide for focus group discussion with mothers of young children (Kristina)
5. Training on questionnaires (Kimberly and Mahmoud)

Thursday 22 November 2012

1. Morning: Field testing of all tools in Manza, a non-dairy producing village that is not participating in the survey
2. Afternoon: feedback session with trainees and trainers to incorporate suggested changes to tools
Training materials

Introduction to context and framework (presentation): see Annex 1

How to be a good facilitator (presentation): see Annex 2

Generic tools for RIA in livestock value chains (participatory rural appraisal and focus group discussions guides, questionnaires)
### List of participants

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Name</th>
<th>Sex (M/F)</th>
<th>Country of origin</th>
<th>Country Classification (Developing/Developed)</th>
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At the end of this week, everyone should know:

- Why we are HERE
- What do we have to do?
- How do we do it?
- When do we do it?
- Who does what?

Why are we HERE in Morogoro?

- SUA has longstanding partnership with ILRI
- ILRI is one of 15 international research centres organised in a consortium (CGIAR)

Why are we HERE in Morogoro?

- Strategic objectives:
  - reduce rural poverty
  - improve food security/nutrition/health
  - sustainably manage natural resources
- Criticism: isolated research/not enough impact
- 2012: launch of CGIAR Research Programs (CRP) http://www.cgiarfund.org/research_portfolio
- Multi-centre, multi-partner, multi-disciplinary
More milk, meat, and fish by and for the poor

CGIAR Research Program on Livestock and Fish

Goal: increasing production/productivity for food security in 9 selected value chains

Past research has focused specific aspects of given value chains, commodities and countries.

Why are we HERE in Morogoro?

Traditional approach was piecemeal
R4D integrated to transform selected value chains in targeted commodities and countries.
Why are we HERE in Morogoro?

- Large growth potential similar to Kenya (same conditions, 6 times higher production)
- Selection of sites
  - Kilosa/Mvomero districts in Morogoro region
  - Handeni/Lushoto districts in Tanga region

http://livestockfish.cgiar.org/focus/tanzania/

What has been done so far?

Value chain assessment
- Characterize how value chain works and the role of the various actors
- Identify constraints, inefficiencies and inequities
- Identify potential opportunities and strategies for pro-poor upgrading

"More Milk in Tanzania"

What do we still have to do:
What do we still have to do:

- CGIAR Research Program on Agriculture for Nutrition and Health
- Prevention and control of agriculture-associated diseases
  - Food safety
  - Zoonoses
  - Emerging diseases
  - Ecohealth/OneHealth
- Integrated programs & harmonized policies


At the end of this week, everyone should know:

- Why we are HERE
  - potential of the dairy value chain in Tanzania
- What do we have to do?

Safe Food, Fair Food (SFFF)

2008-2015

Food safety in informal markets

- Milk, meat and fish are crucial to nutrition and livelihoods of the poor
- In sub-Saharan Africa, more than 80% of animal-sourced foods are marketed informally
- Small-scale producers dominate informal markets
Food safety in informal markets

By “informal markets”, we mean markets

- Where many actors are not licensed and do not pay taxes
- Where traditional processing, products and retail prices predominate
- Which escape effective health and safety regulation

Challenges at policy level

- Current food safety management seems to be neither effective nor efficient
- Tendency to adopt international food quality standards and hazard-based regulations without considering local contexts
- Consumers are scared by “half-truths”

But how to deal with informal markets?

- Ban or improve and promote?
- Zero-risk policy (“If in doubt, keep it out”)?
- Is there an acceptable level of risk?
- How can participation help improve food safety?
Approach: risk analysis or risk-based decision making

- Clear distinction between risk and hazard!
  - Hazard = anything that causes harm
  - Risk = probability + consequences

- Risk analysis: structured approach for evaluating and dealing with risks
Hazard identification

What harm does it cause?
How does harm depend on dose?

Hazard characterization
Exposure assessment

Risk characterization

Participatory methods
fit well

Risk communication

Can it be present in food?
Can it cause harm?

How and to what extent does it get from source to victim?

What is the harm?
What is its likelihood?

Approach:
Risk analysis or risk-based decision making

Participatory methods to fill data gaps
Participatory methods to fill data gaps

Côte d'Ivoire, Mali, Ghana, Ethiopia, Kenya, Tanzania, Mozambique, South Africa

Safe Food Fair Food 1: 25 proof-of-concept studies in 8 countries

Figure 7: Milk marketing channels in Kenya.
Safe Food Fair Food 2

3 main components:

- Multi-pathogen assessment and economic assessment in 4 value chains
- Best-bet interventions piloted
- Engagement with regional economic communities
  - Communicate evidence to policymakers
  - Advocacy for informal markets
  - Include participatory risk analysis to training curricula

At the end of this week, everyone should know:

- Why we are HERE
  Potential of the dairy value chain in Tanzania
- What do we have to do?
  Participatory risk assessment of food safety in the dairy vc
- How do we do it?

How do we do it?

Guidelines for integrated rapid assessment of nutrition and health risks in informal livestock and fish value chains
A. Human population of interest (consumers of food products)

A1. Who are the people? – demographic data/statistics

A2. Where are they? – demographic data/statistics

A3. What are their diets? – dietary diversity scores, food frequency questionnaires, etc.

A4. What are their health problems? – health surveys, surveillance data, anthropometric measurements, etc.

A5. What is their income? – demographic data/statistics

A6. How do culture, religion, ethical concerns impact on their dietary habits and food preparation patterns? – surveys (questionnaire-based)

B. Value chain analysis

B1. Geographical pattern of each chain

B2. People and businesses involved

B3. Nodes and animal/product flows and quantities

B4. Rules that people use for making decisions and those people who are the rule makers and enforcers

B5. Economic, social, cultural and regulatory factors (including enforcement) and constraints that determine the dynamics of the chain

C. Risk assessment (foodborne disease safety and nutrition): What is the risk of foodborne disease and what consequence does it have in terms of nutrition?

C1. Microbial pathogen

C2. Physical hazard

C3. Chemical hazard

C4. Biological hazard

Hazard identification (link to A4)

Hazard characterisation

Assess the severity and duration of adverse effects due to the hazard presence in food

Exposure assessment

Assess all probabilities of intake of the product for specific groups of people that are targets in analysis (e.g. the very poor)

Risk characterisation

Estimate negative impacts following consumption of the contaminated product, taking into account P of developing disease and consequences

Nutrition assessment

Factors that impact on food intake and probability of contamination at home (links to A and B)

Food security assessment

Factors that impact on food intake and probability of contamination at home

Options

List feasible and effective options along the chain that would improve food safety

Costs

Describe the costs of the options taking into account potential negative impacts on nutrition (e.g. price increase could reduce consumption)

Benefits

Describe the benefits of the options taking into account potential positive impacts on nutrition (e.g. less disease, better absorption)

D. Assessment of risk management options

For more information, visit

http://safefoodfairfood.wordpress.com

www.ilri.org
Training for data collection in Tanzania

How to be a good facilitator

What makes you a good facilitator?

Characteristics of a good facilitator

- Charisma, good presentation, compassion, interested in people’s problems
- Good sense of humour
- Culturally sensitive
- Empathy for personal interactions
- Knowledgeable of participatory methodologies, including group dynamics

What should the facilitator know?

- Proactive looking for information that is relevant to one’s work and to the people one works for/with
- Open-minded and able to manage conflicts
- Creative, therefore can design new ways of doing his job when needs raise
- Plans ahead the activities
- Horizontal communicator

- Familiar with the theory and practice of group communication and human behaviour
- Good understanding of different variables such as self-confidence, prejudices, biases, motivation, confidence, identity, perception, relevance, evaluation
- Understand and respect the culture of the group you are working with.
Communication skills

- Good at hearing
- Knows how to ask questions
- Good observer/interpreter of body language
- Good voice and energetic attitude
- Capacity for doing quick synthesis (wrap-up) of the session’s main ideas