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The U.S. Government's Global Hunger & Food Security Initiative



## THE ENABLING ENVIRONMENT FOR ANIMAL SOURCE FOOD MARKET SYSTEM SUCCESS: LESSONS FROM THE FIELD

### *Marketing Factors*

Feed the Future Innovation Lab for Livestock Systems  
Feed the Future Enabling Environment for Food Security Project

November 12, 2020

*Photo credit: Fintrac Inc.*



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## ANIMAL-SOURCE FOODS



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## SPEAKERS



**Dr. Meera Chandra**

*USAID Bureau for Resilience and Food Security*



**Saskia Hendrickx**

*Feed the Future Innovation Lab for  
Livestock Systems*



**Adam Keatts**

*Feed the Future Enabling  
Environment for Food Security*



**Dr. Steve Staal**

*Feed the Future Enabling  
Environment for Food Security*



**Dr. Bart Minten**

*International Food Policy Research  
Institute*



**Dr. Hung Nguyen**

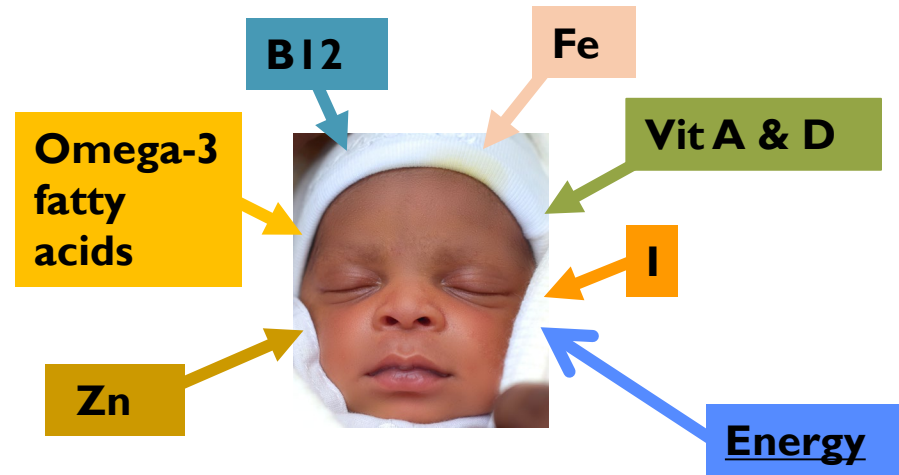
*International Livestock Research Institute*



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# IMPORTANCE OF ANIMAL-SOURCE FOODS (ASF)



Brain growth ~ 90% complete in first 1000 days; determines brain function for life

(Miller, 2019)

Photo by [Aikomo Opeyemi](#) on [Unsplash](#)

- Best high-quality, nutrient-rich food for children aged between 6 and 23 months (WHO, 2017).
- Packed with **ideal** protein and **more bioavailable** micronutrients than plants.
- Can help prevent **stunting**, which reduces brain development and growth and increases poverty.
- 60% of children don't eat enough ASF (UNICEF, 2020).

# INNOVATION LAB FOR LIVESTOCK SYSTEMS

## Vision

Sustainably intensify livestock production to improve the nutrition, health, incomes, and livelihoods of the poor.



*Photo credit: J. Vipham*

## Donors

USAID  
Bill & Melinda Gates Foundation

## Countries

Cambodia, Nepal, Burkina Faso,  
Niger, Rwanda, Ethiopia,  
Uganda, Kenya

## Projects

45 field to fork research for  
development projects on all species

## Grantees

63 foreign and U.S. partners



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## THE ENABLING ENVIRONMENT FOR ANIMAL SOURCE FOOD MARKET SYSTEM SUCCESS: MARKETING FACTORS

**Feed the Future Enabling Environment for Food Security Project**

*Dr. Steve Staal, Consultant, EEFS*  
*Adam Keatts, Chief of Party, EEFS*

November 12, 2020

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# THE ENABLING ENVIRONMENT FOR ASF

## The Enabling Environment for ASF is Unique

- Unique technologies and requirements for trade, processing/packaging, food safety management, etc.
- The rules that exist for the agriculture sector may be necessary, but are insufficient for ASF.
- Each ASF market system may also face unique challenges, opportunities, and enabling environment factors for success.

## EEFS Guidance Document

- Assess factors in the enabling environment that support competitive, inclusive, resilient, nutrition-sensitive systems.
- Document a comprehensive set of formal and informal factors in the EE that affect ASF market system success.
- Identify associated metrics and sources for country-specific analysis.

## Use Case:

- A guide for analysis at the country level to inform USAID decisions.
- Target resource allocation to alleviate barriers or capitalize on opportunities in the enabling environment.



# THE ENABLING ENVIRONMENT FOR ASF

We categorize our findings by:

- **Supply-side** factors, **marketing** factors, and **financial service** factors.

Today, we will focus on the marketing factors

- These are **the factors that enable or hinder ASF market enterprises' ability to reach their end-market destination safely and efficiently.**

The marketing factors we will discuss today include

- Trade facilitation (policy, infrastructure, SPS)
- Food safety control mechanisms
- End-market demand



Photo by Fintrac Inc.



# WHY CONSIDER MARKETING FACTORS?

- **Trade Facilitation:**

- Roughly 10 percent of ASF products produced globally are formally traded across borders per year, but these figures likely miss a significant amount of informal and unrecorded trade.
  - In regions such as the Horn of Africa, the Sahel, and South Asia, live animal and livestock product exports have significant economic importance.

- **Food Safety:**

- ASFs are among the top sources of foodborne disease risks in developing countries along with other fresh foods.
  - Food safety risks go beyond public health, as they can have significant economic consequences as well.

- **End-Market Demand:**

- The enabling environment factors that influence demand for ASF will influence local nutritional outcomes.
- Understanding how demand shapes product specifications by channel will enable USAID and IPs to support smallholder and agribusinesses to appropriately capitalize on market opportunities.

# TRADE FACILITATION

## Trade Infrastructure and Policy

- Where ASF exports are economically sustainable, specific types of infrastructure will be needed.
- Certain infrastructure is related to animal movement including holding pens, water, feed, health, and export points along transport routes.
- In some cases, these may be publicly supported, but where there are large private market actors, private providers of these services will play a role.
  - Such as quarantine pens in coastal Horn of Africa operated by large buyers from the Arabian Peninsula.
- Other EE factors may include harmonization of standards and any associated informal taxes at control points and border crossings.

# TRADE FACILITATION

## Sanitary and Phytosanitary Standards

- Codex Alimentarius sets food standards, guidelines, and codes of practice recognized by the World Trade Organization as the benchmark standards for national food safety regulations.
  - Important that developing countries participate in the Codex negotiations to ensure their interests are represented.
- A key capacity feature of an export-oriented livestock industry is the ability to comply with SPS requirements.
  - Mechanisms have been developed, and to some extent implemented, to meet these requirements.
  - E.g., establishment of disease-free zones and export corridors which keep livestock from being exposed, so that they can be exported without vaccination – examples from Botswana and Namibia.
- Commodity-based trade (CBT) focuses on exporting fresh or frozen de-boned beef proven to be pathogen-free through HACCP processes and traceability.
  - CBT could be economically unsustainable for many countries, given investment and compliance costs.
  - Requires detailed, context-specific cost-benefit analysis including finishing animals to quality standards.
  - Specific protocols for its use to facilitate trade have not yet been developed.



# FOOD SAFETY CONTROL

## Public Sector Control Mechanisms

- In Feed the Future countries, public resources for regulatory enforcement are limited, and consumers may be less willing or able to pay for increased safety.
- Top-down enforcement is generally ineffective if not market-based.
  - Need for innovative pathways for the public sector to improve food safety in domestic markets.
- **Co-regulation:**
  - Enabling market actors to self-regulate, accompanied by appropriate incentives.
  - Requires close interaction and coordination among private sector actors and with public regulators.
  - Requires organizational structures and policies to coordinate agricultural and health officials around food safety.
  - Example: Training and certification of informal milk traders in Kenya which improved milk safety and officially regularized traders who were otherwise being harassed and punished.
  - Led to \$26M USD in annual gains to the economy by allowing these small-scale actors to operate more freely and efficiently, thus reducing transaction costs.

# FOOD SAFETY CONTROL

## Public Sector Control Mechanisms

- Additional pathway for public sector food safety control.
- **Evidence-based risk analysis:**
  - Contrasts with historical use of “expert-based” risk analysis.
  - Reveals effective risk threat points and types in the value chain.
  - Generally accepted now as the most effective approach.
- Factors for this type of approach to be effective:
  - Shared risk assessment capacity in the public sector (including research institutes) and private actors, as part of co-regulation, including the use of participatory risk assessment, now recognized as better able to capture multiple sources of information regarding risks.

# FOOD SAFETY CONTROL

## Private Sector Control Mechanisms

- Private food safety standards have emerged in both domestic and international markets and are all linked to increased consumer interest in food safety and willingness to pay for increased assurance.
  - Voluntary standards: effectively mandatory within particular market channels.
- Private standards often exceed public standards in several ways.
  - Stricter specs for product attributes and more attention to practices and processes along the supply chain (e.g., Good Animal Husbandry Practices) rather than end results in terms of food safety attributes.
  - The means for monitoring those processes by the private or public actors (or independent third-party actors, such as certifying agencies).
- For such systems to work effectively:
  - Private sector industry associations or networks can develop standards in close partnership with suppliers, buyers/retailers, and public sector regulators as part of the co-development and enforcement of regulation.



# END MARKET DEMAND

## Demand Pull

- Product differentiation is driven by the nature of consumer buyer behavior.
- Where the majority of consumers have limited disposable incomes, product price is typically the most important factor.
- Change in consumer preferences related to traditional foods, product attributes including packaging and refrigeration, and to food safety are likely to change only in the long run.
  - In the context of a near-to-medium term investment planning horizon, existing consumer preferences may need to be carefully considered.
  - Demand for informal/traditional products is the main barrier to modernizing and differentiating product supply.
- Examine import volumes and prices for ASF products (to demonstrate local demand currently unmet by domestic production systems).



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## For more information

**Lourdes Martinez Romero**

USAID/RFS COR

[lmartinezromero@usaid.gov](mailto:lmartinezromero@usaid.gov)

**Adam Keatts**

EEFS Chief of Party

[akeatts@fintrac.com](mailto:akeatts@fintrac.com)



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# TRANSFORMATION OF ETHIOPIA'S LIVESTOCK MARKET SYSTEMS:

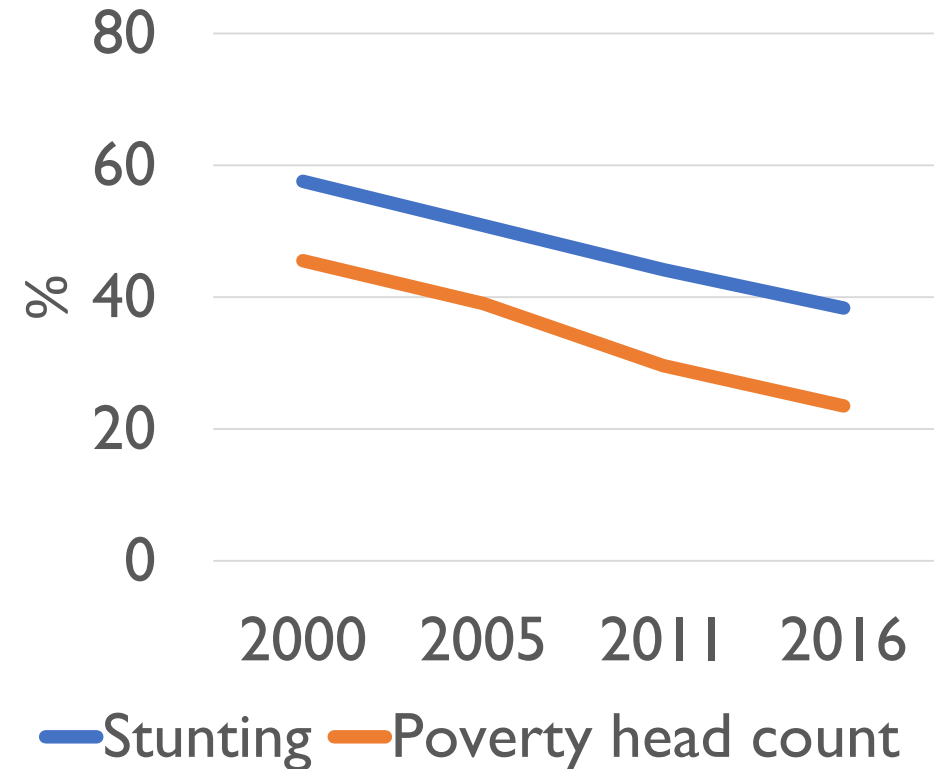
## Implications for Prices and Inclusiveness

Bart Minten, IFPRI

November 12, 2020

# TRANSFORMATION IN ETHIOPIA

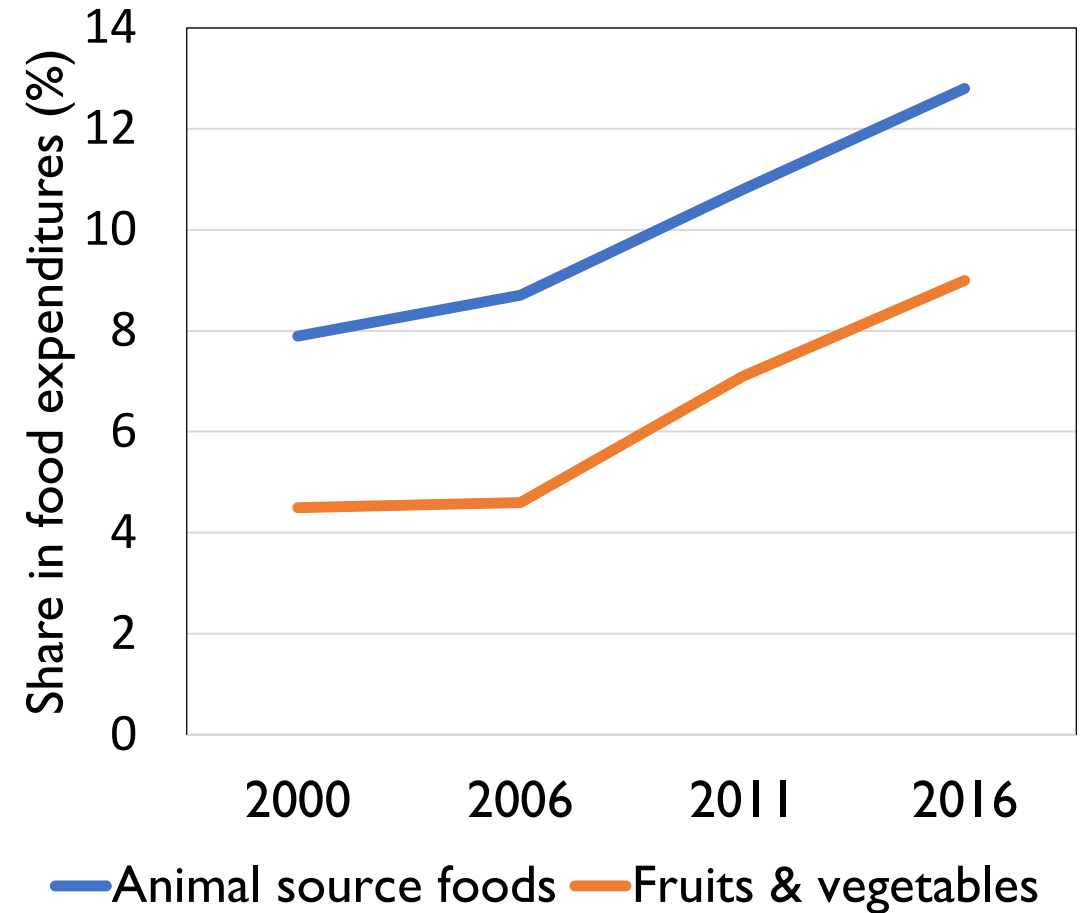
- Rapid poverty reduction
- Rapid decline in stunting
- However, stunting levels still very high
- Monotonous diets an important issue



# INCREASING EXPENDITURES ON HIGH-VALUE FOODS

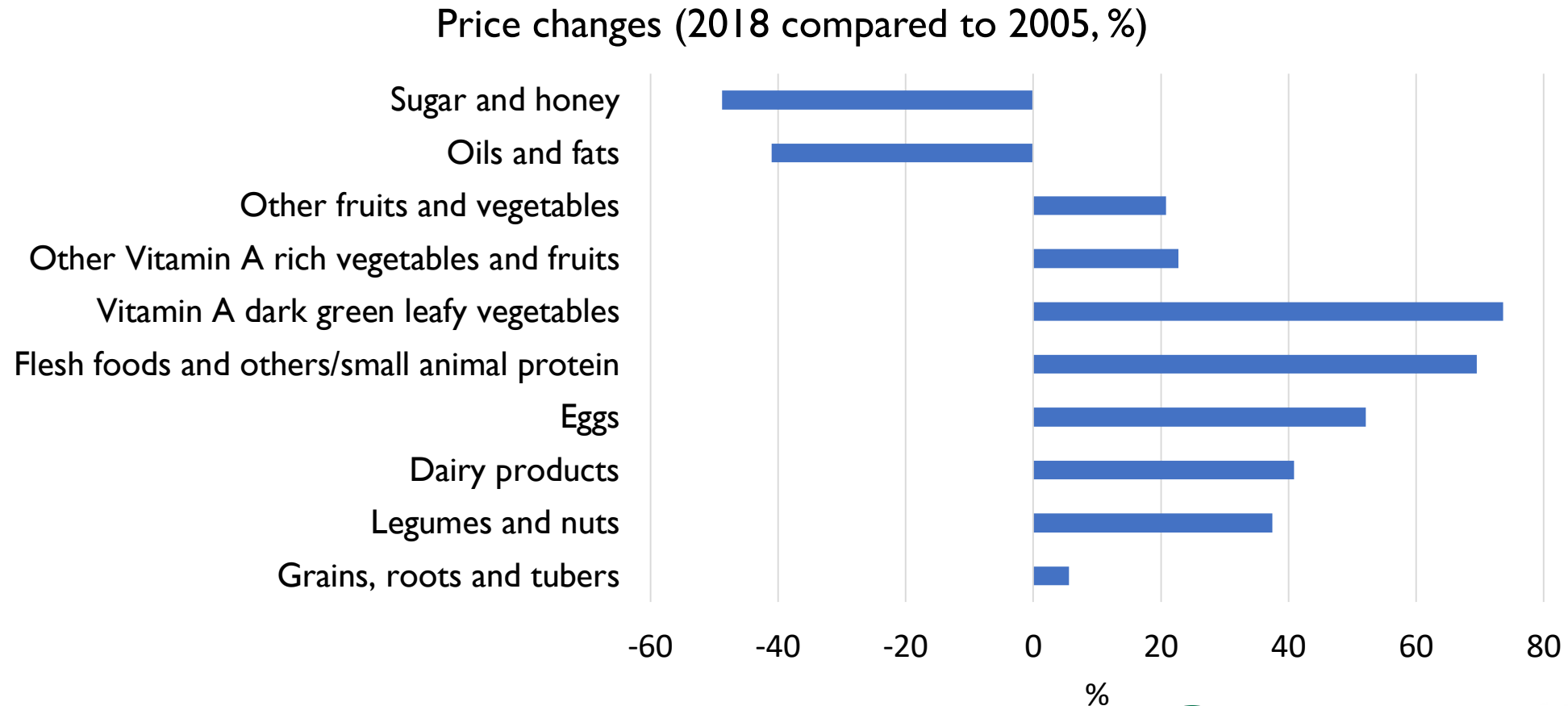
Rising consumption of:

- Animal source foods (dairy most important)
- Fruits and vegetables (cabbage, onions, tomato, green pepper most important)





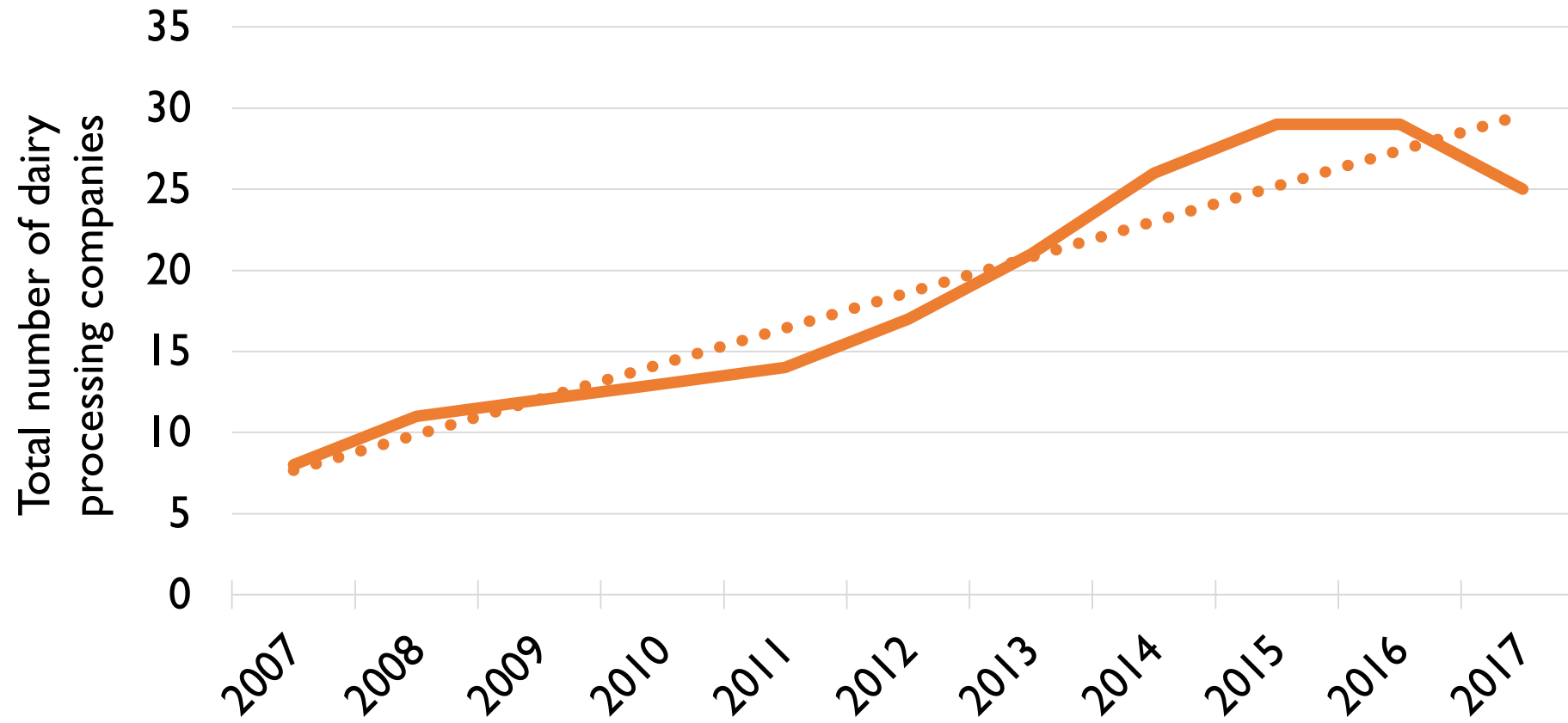
# HOWEVER, PART OF INCREASED EXPENDITURES TO PAY FOR INCREASED PRICES



# NOT ENOUGH SUPPLY RESPONSE IN LIVESTOCK SECTOR

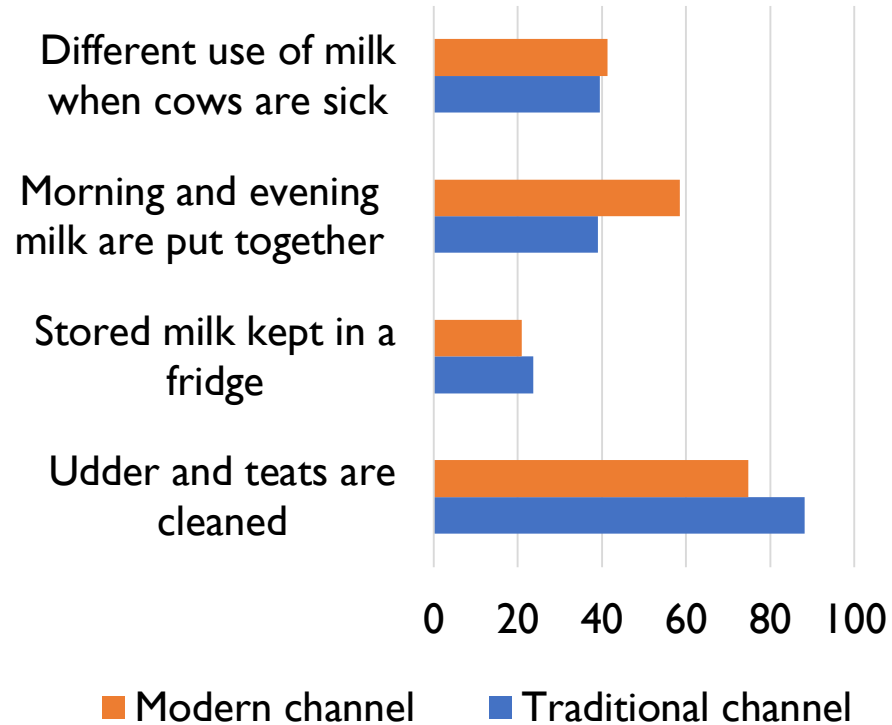
- Most growth from increases in the number of livestock.
- Number of livestock lost to deaths more than twice the number sold for meat production.
- Modern input use contributed little to growth.
- However, pockets of dynamism — e.g., Addis and supplying regions for dairy products.

# RAPID INCREASE IN DAIRY PROCESSING COMPANIES, FROM LOW BASE

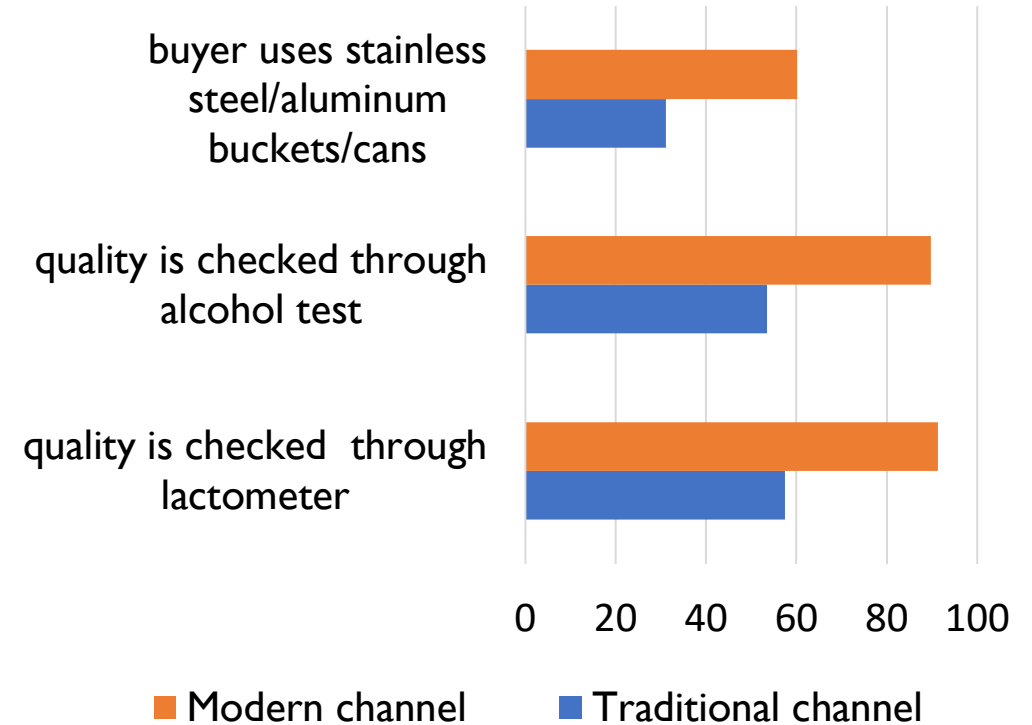


# HOWEVER, HYGIENIC PRACTICES NOT MUCH IMPROVING WITH MODERNIZATION; TESTING AND MILK HANDLING IS THOUGH

Hygienic Practices (%)

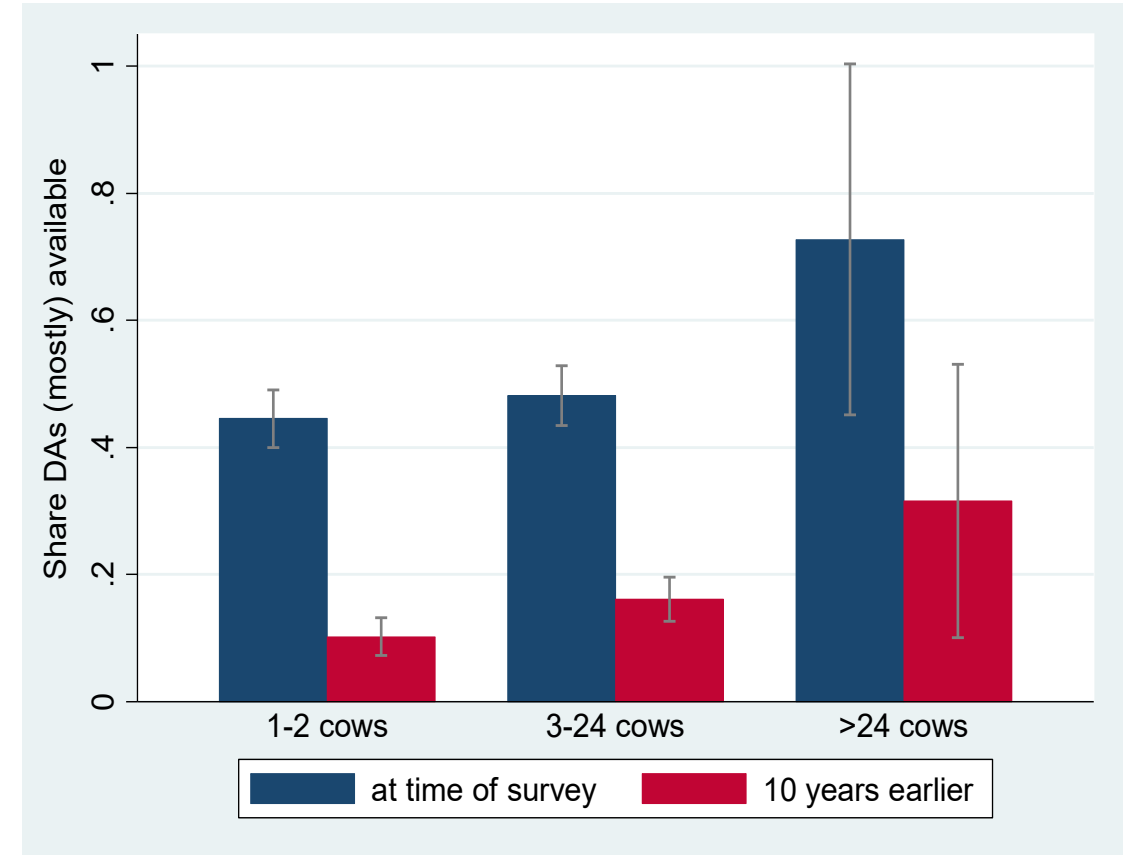
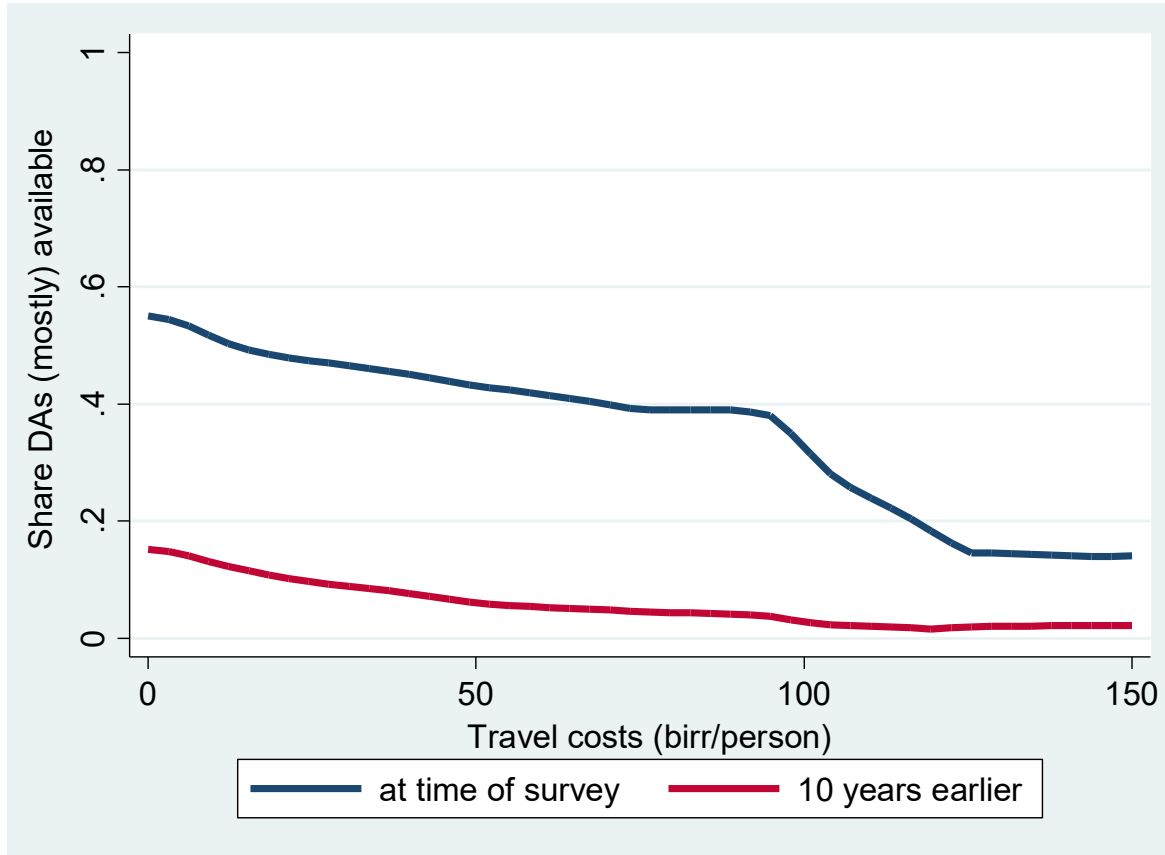


Testing and Milk Handling (%)

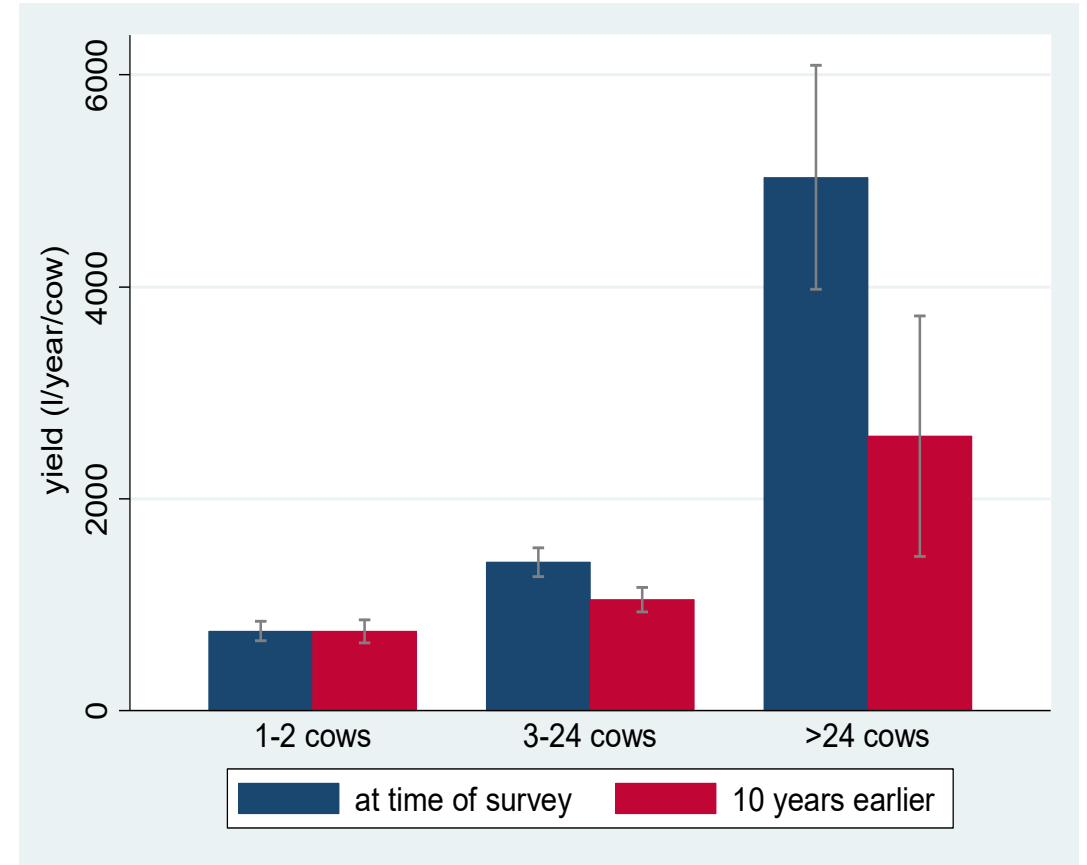
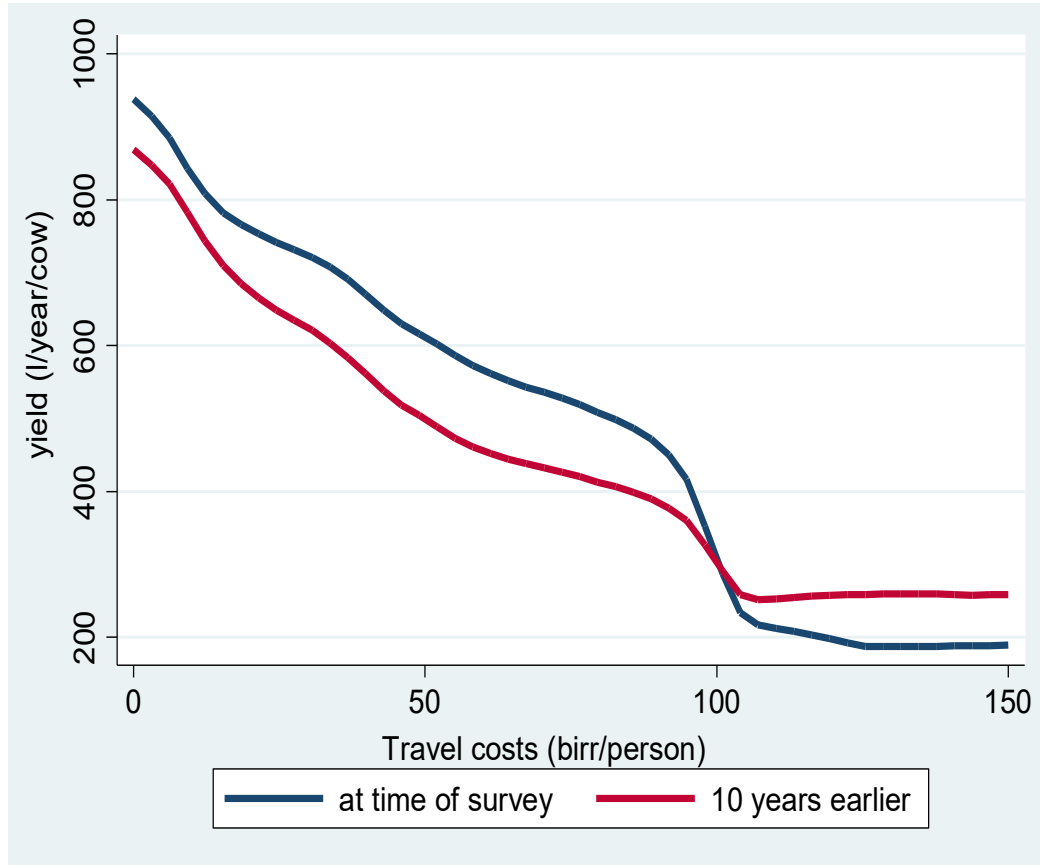




# IMPROVING SERVICE DELIVERY SUCH AS EXTENSION, BUT STILL LOW



# MILK YIELDS IMPROVING, BUT NOT ALL INCLUDED IN THESE CHANGES



## CONCLUSIONS

- Ethiopia successful in cereal sector, but less so for ASF.
- More investments/attention to livestock sector and markets needed (e.g., A.I., extension, feed, chilling centers):
  1. Want to keep prices low — nutritional benefits.
  2. Massive demand changes are coming.
- Pay particular attention to:
  1. Inclusiveness of small and remote farmers.
  2. Modernization not yet leading to safer practices; safe practices should be rewarded in further transformation.

## Disclaimer

This work was funded in whole or part by the United States Agency for International Development (USAID) Bureau for Food Security under Agreement # AID-OAA-L-15-00003 as part of Feed the Future Innovation Lab for Livestock Systems. Any opinions, findings, conclusions, or recommendations expressed here are those of the author alone.



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INTERNATIONAL  
LIVESTOCK RESEARCH  
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# SAFE FOOD, FAIR FOOD FOR CAMBODIA

Hung Nguyen, International Livestock Research Institute (ILRI)

November 12, 2020

*Photo credit: ILRI*

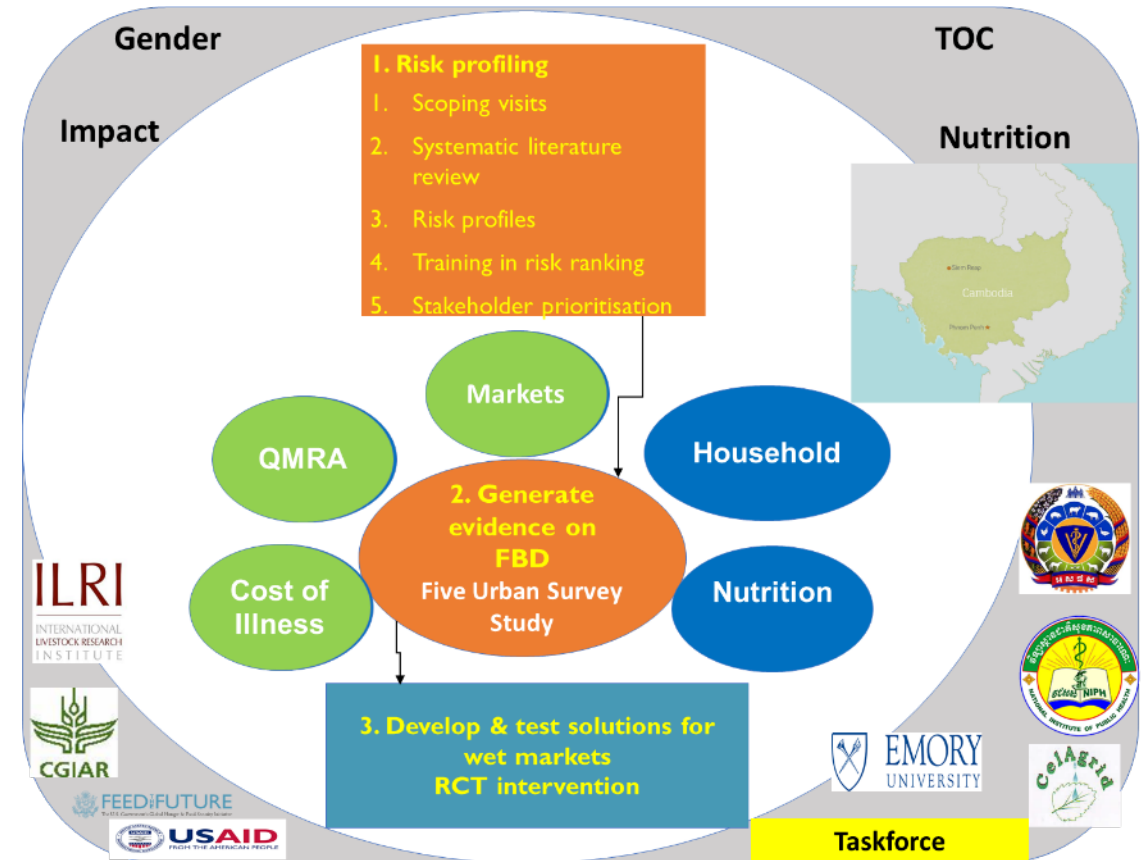
# SFFF PROJECT AIM & OBJECTIVES

**Reducing** the burden of **foodborne disease** in informal, emerging formal, and niche markets and targeting small- and medium-scale producers.

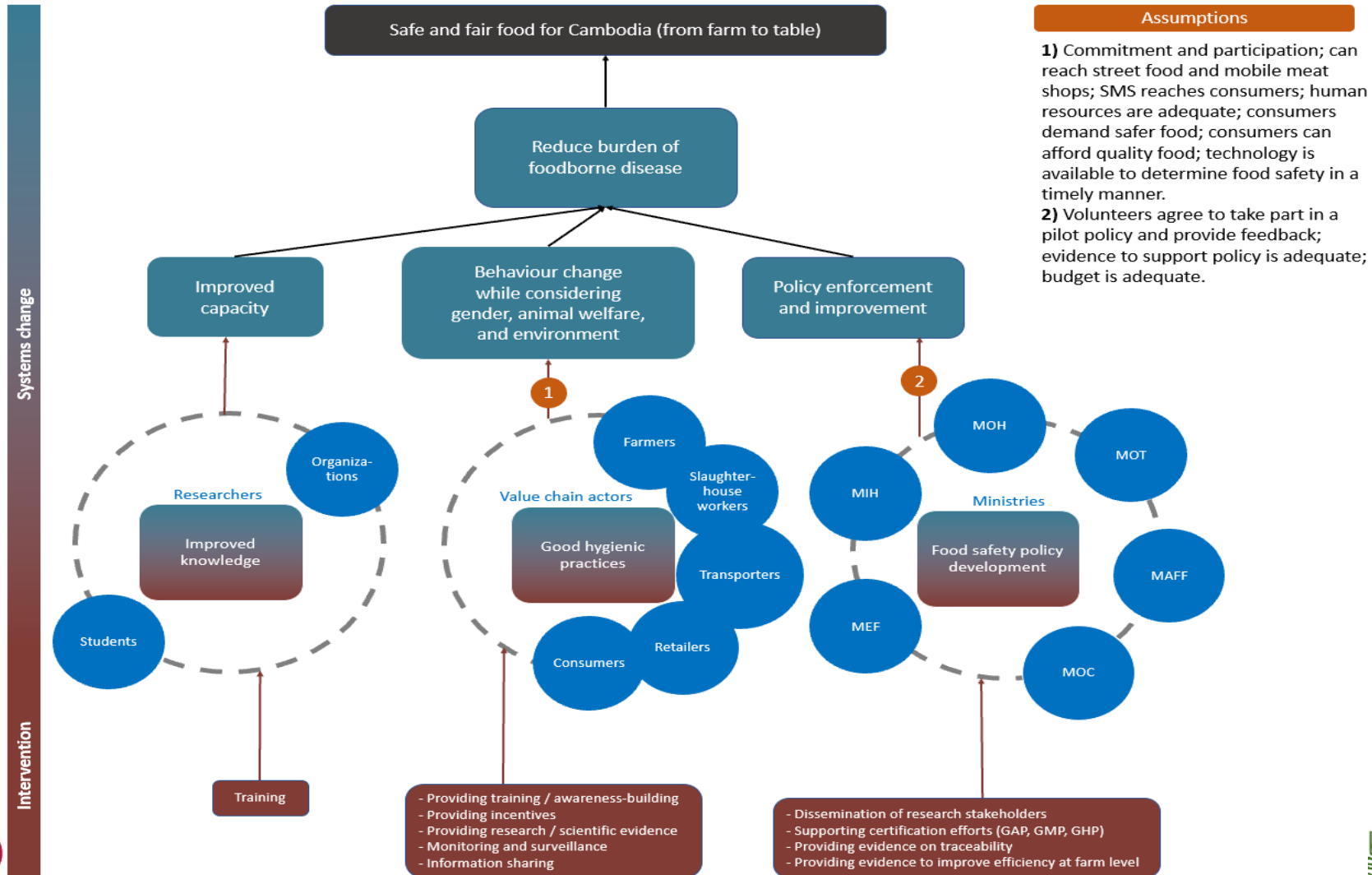
**Better evidence** on foodborne disease in **Cambodia**.

**Approach** for improving food safety in wet markets.

Time: July 2017 – March 2021



# THEORY OF CHANGE



# RESULTS

*A nationwide multi-hazard survey in markets in Cambodia found the prevalence in meat (**pork and chicken**) of **Salmonella** was **43%** and of **Staphylococcus** was **31%**.*

Sample type	N. Specimen	N. positive both <i>Salmonella</i> and <i>S. aureus</i>	<i>Salmonella</i> positive	<i>S. aureus</i> positive
Chicken	186	38 (20.4%)	84 (45.2%)	78 (41.9%)
Cuttingboard chicken	62	6 (9.7%)	26 (41.9%)	12 (19.4%)
Cuttingboard pork	62	1 (1.6%)	19 (30.6%)	7 (11.3%)
Pork	186	33 (17.7%)	85 (45.7%)	58 (31.2%)
<b>Grand Total</b>	<b>496</b>	<b>78 (15.7%)</b>	<b>214 (43.1%)</b>	<b>155 (31.3%)</b>

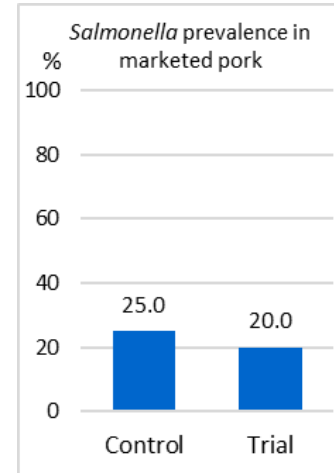
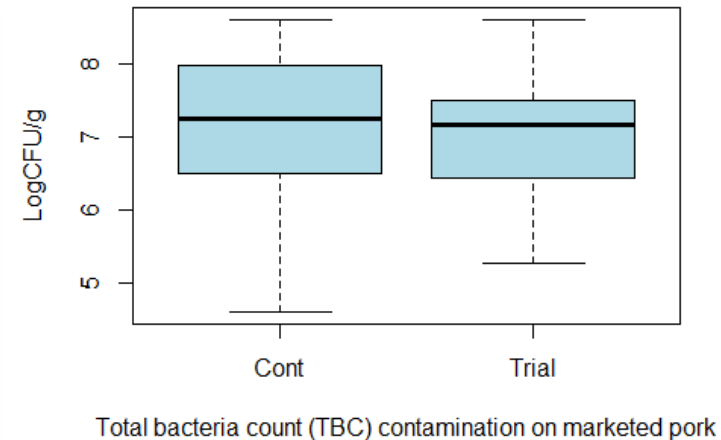
*The cost of illness of **foodborne diarrhea** was **\$63 USD per case**. The study compiled data from national and provincial hospitals and local health centers, and considered direct and indirect costs.*

Cost	National Hospital (n=44)	Referral Hospital (n=60)	Regional Hosp. (n=100)	Community Clinic (n=62)	Overall (n=266)
<b>Direct medical cost</b>					
<b>[usd]</b>	125.77	9.42	27.85	4.19	34.38
<b>Direct non-medical cost</b>					
<b>[usd]</b>	40.64	8.36	26.33	0.30	18.58
<b>Indirect cost</b>					
<b>[usd]</b>	21.43	6.38	10.89	3.08	9.80
<b>Total cost [usd]</b>	<b>185.88</b>	<b>24.16</b>	<b>65.07</b>	<b>7.57</b>	<b>62.76</b>

# FROM EVIDENCE GENERATION TO TCM INTERVENTIONS TO IMPROVE FOOD SAFETY IN WET MARKETS

## Key Content:

- Easy-to-clean surface
- Frequent washing (and disinfection)
- Separation (fresh/cooked)
- Training
- Hygienic cutting board
- Branding







កម្រាលដែលពិបាកសម្អាត (ដូចជា ក្រដាសកាតុង ឬស្បៀ) អាចធ្វើឲ្យបាក់តេរីលូតលាស់



កម្រាលដែលងាយសម្អាត អាចត្រូវបានផលិតក្នុងស្រុក និងមានតម្លៃទាប





## Key Content:

- Food safety technical working group
- From ministries, WHO, FAO
- Capacity building
- Exchange and influence

# NEXT GENERATION OF FOOD SAFETY WORKERS

1. BSc, MSc, PhD students
2. Government staff





# KEY STAKEHOLDERS TO ENSURE GOOD IMPLEMENTATION OF MARKET INTERVENTIONS

- National GDAHP
- Provincial animal health workers
- Market managers
- Retailers



## KEY MESSAGES

1. Food safety in Cambodia: high level of microbial contamination of pork and chicken in traditional markets and of public concerns.
2. Theory of change development was key to identify key stakeholders to improve food safety.
3. Strong engagement of high level “taskforce” and other actors (provincial animal health workers, market managers, retailers) made intervention implementation successful.
4. Coping with pandemic and incentivizing actors are key to ensure compliance to improve food safety and hygiene in traditional markets.

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# Q&A



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