



# FEED THE FUTURE

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



## Enhancing milk quality and consumption for improved income and nutrition in Rwanda

*Emily Ouma, Valerie Flax, Mary-Ann Schreiner, Ben Bizinde, Lambert Izerimana, Jesse Routte, Olivier Kamana, Nadhem Mtimet and Julie Kariuki*

Rwanda Innovation Platform meeting, 2<sup>nd</sup> April 2019 at the Hotel Mille Collines, Kigali, Rwanda



**USAID**  
FROM THE AMERICAN PEOPLE



## RATIONALE

- High levels of child malnutrition
  - 37% of children less than 5 years of age are stunted
- Several dairy development programs
  - Girinka program – increased household income and reduce child malnutrition among poor households
  - USAID Feed the Future-funded Rwanda Dairy Competitiveness Program II – 2012-2017
  - Many achievements, but challenges still exist as regards:
    - Production of high quality milk
    - Achieving competitiveness in milk market channels
    - Governance of dairy cooperatives and low value proposition to members
- Lack of evidence linking dairy value chain interventions to nutrition outcomes



# FEED THE FUTURE

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

## OBJECTIVE I

### MAIN AIMS:

- Evaluate the impact of a social and behavior change communication (SBCC) intervention on animal source food (ASF) and milk consumption and nutrition outcomes in children 1- 3 year olds and pregnant and lactating women, among Girinka beneficiaries.
- Compare ASF consumption and nutritional status in young children and women among Girinka beneficiary and Girinka eligible households,

### OVERALL ACCOMPLISHMENTS:

- Randomized cells in Nyabihu and Ruhango Districts to SBCC or no SBCC
- Created sampling frames of Girinka beneficiary and Girinka eligible households
- Completed baseline nutrition survey
- Analyzed survey data
- Drafted baseline report
- Conducted formative research for the development of SBCC plan
- Developed and began implementing SBCC intervention



**USAID**  
FROM THE AMERICAN PEOPLE

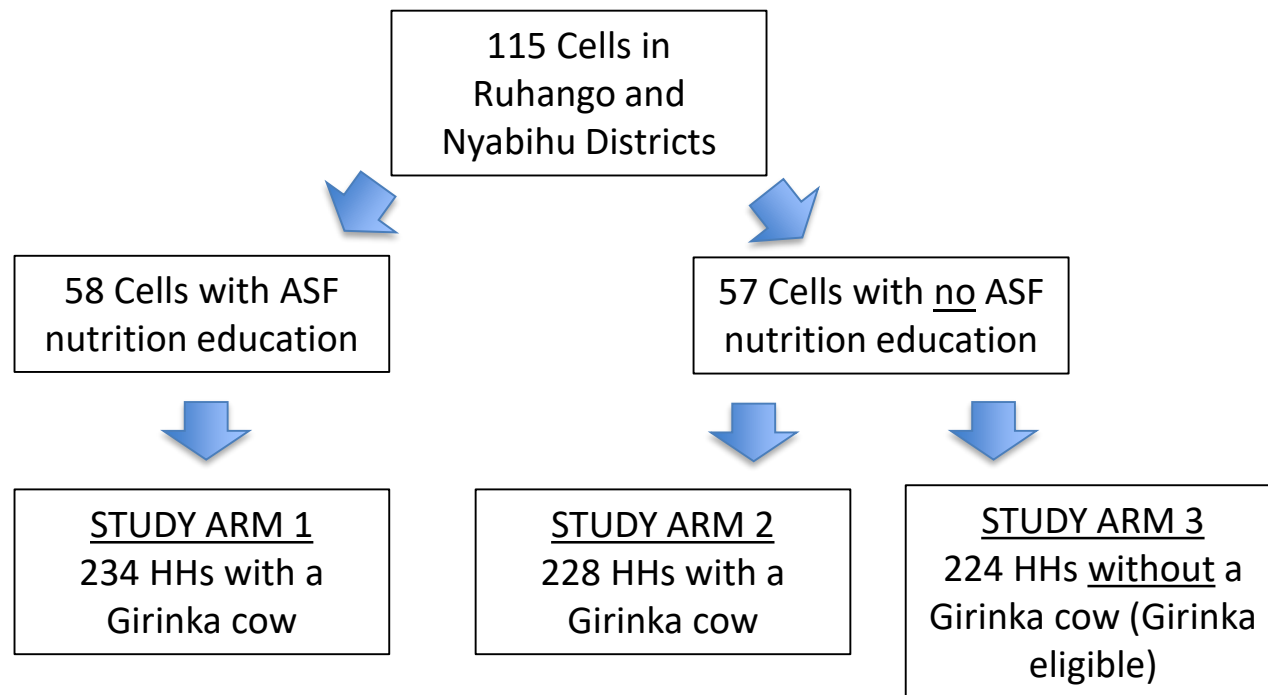




# FEED THE FUTURE

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

## STUDY DESIGN - CLUSTER RANDOMIZED CONTROLLED TRIAL



**USAID**  
FROM THE AMERICAN PEOPLE



## BASELINE RESULTS: NUTRITIONAL STATUS

	Girinka and SBCC (N=234)	Girinka only (N=228)	Girinka eligible (N=224)
<b>CHILD</b>			
Height-for-age z-score (HAZ)	-1.80	-1.61	-2.04***
Weight-for-age z-score (WAZ)	-0.74	-0.62	-0.91***
Weight-for-height z-score (WHZ)	0.21	0.25	0.15
Stunting (HAZ < -2 SD)	40.6%	37.7%	47.8%*
<b>MOTHER</b>			
Body-mass index (BMI)	22.60	22.56	22.64

\*  $p < .05$ , \*\*\*  $p < .001$ , \*difference between Girinka only and Girinka eligible.



# FEED THE FUTURE

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

## DIETARY DIVERSITY & ASF CONSUMPTION

	Girinka and SBCC (N=234)	Girinka only (N=228)	Girinka eligible (N=224)
<b>CHILD</b>			
Minimum dietary diversity	51.3%	44.3%	43.8%
Any ASF consumption	55.6%	47.8%	43.8%
Any dairy consumption	44.0%	36.4%	34.8%
Cow's milk consumption	9.4%	7.5%	5.4%
<b>MOTHER</b>			
Minimum dietary diversity	29.9%	29.8%	20.1%*
Any ASF consumption	33.3%	36.0%	21.9%***
Any dairy consumption	25.6%	28.1%	8.0%***

\*  $p < .05$ , \*\*\*  $p < .001$ , \*difference between Girinka only and Girinka eligible.



**USAID**  
FROM THE AMERICAN PEOPLE



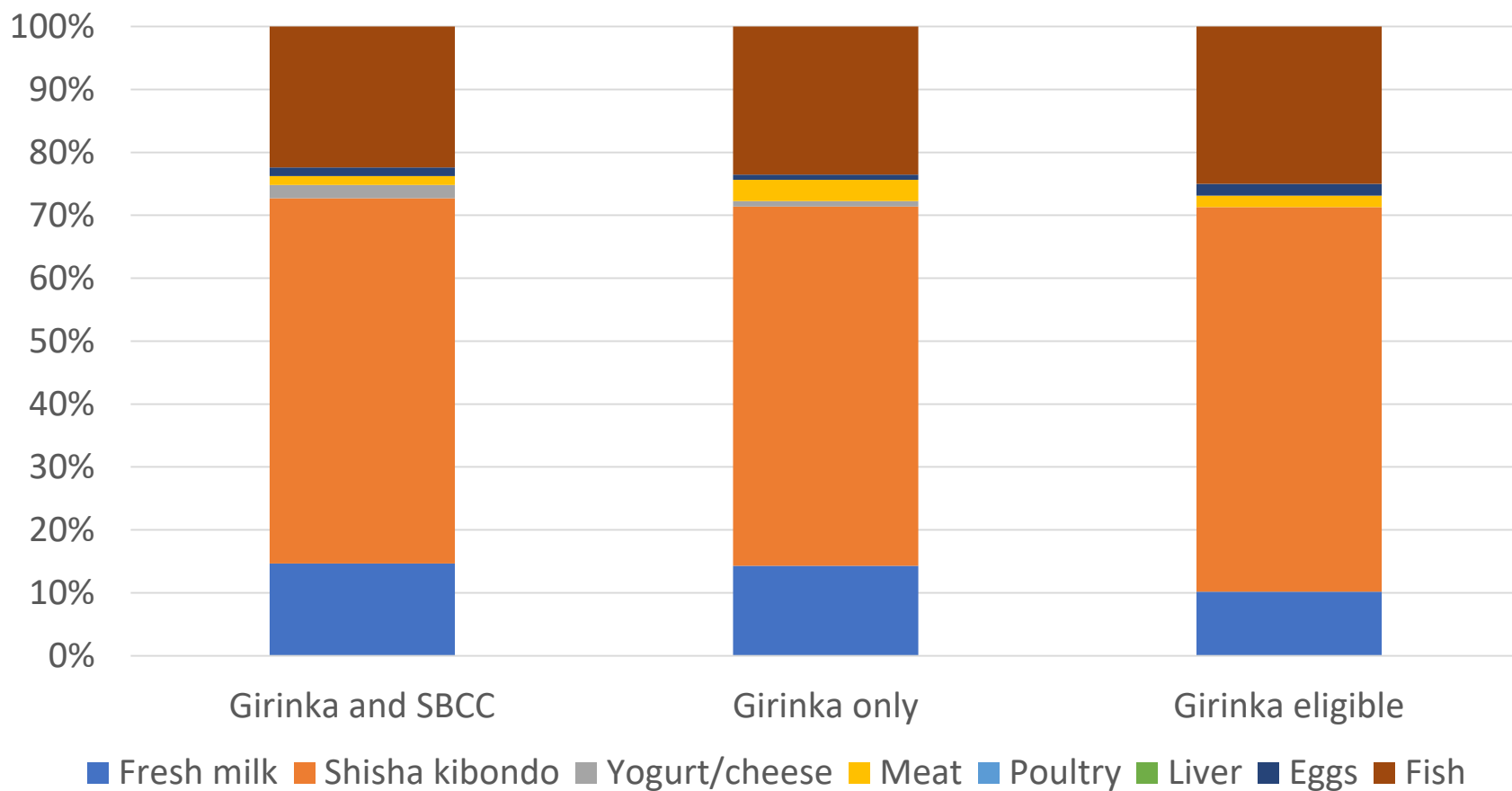




# FEED THE FUTURE

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

## TYPES OF ASF CONSUMED BY CHILDREN (24H RECALL)



**USAID**  
FROM THE AMERICAN PEOPLE

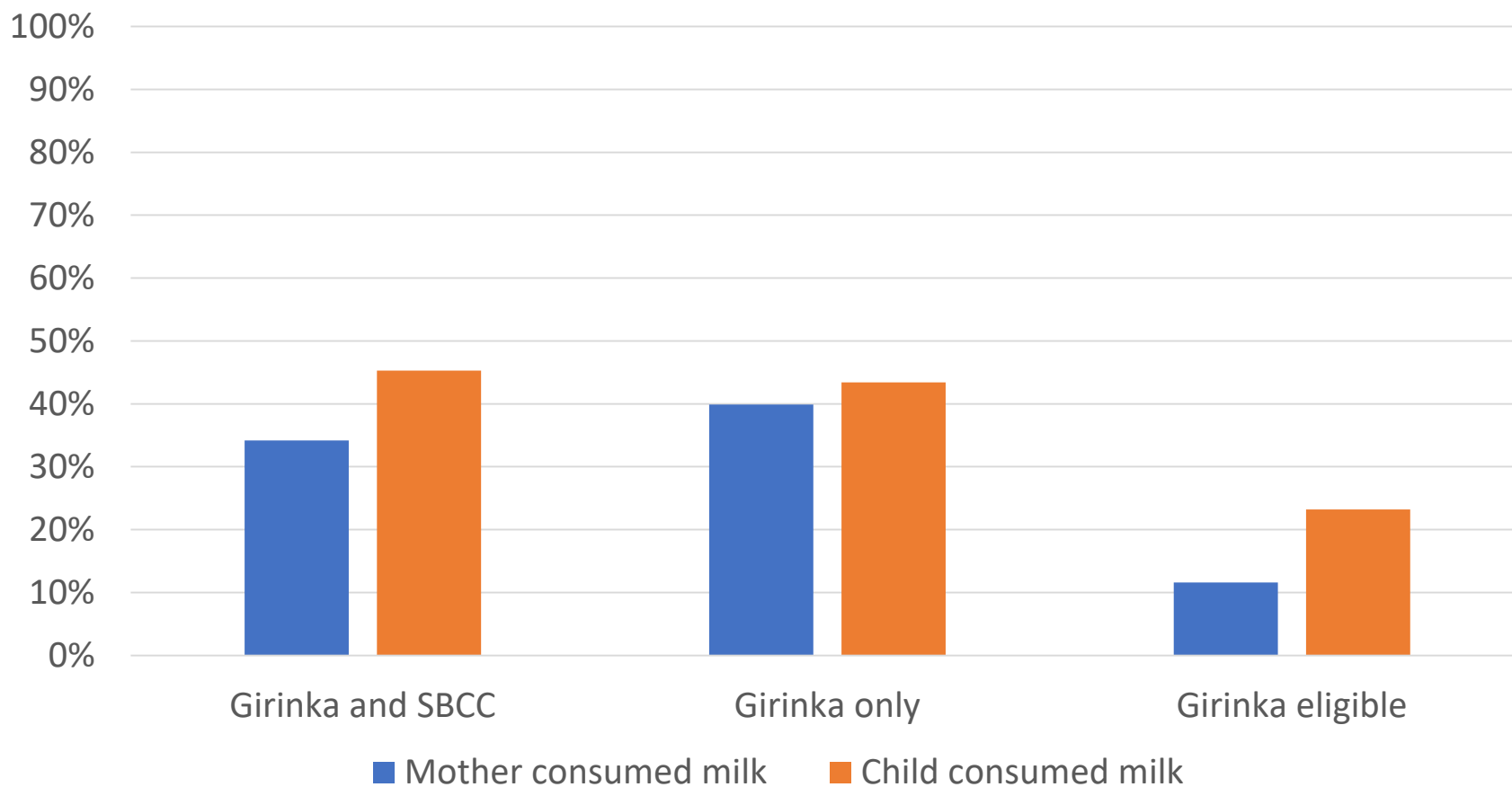




# FEED THE FUTURE

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

## MATERNAL & CHILD FRESH MILK CONSUMPTION (7 DAYS)



**USAID**  
FROM THE AMERICAN PEOPLE







# FEED THE FUTURE

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

## MILK FOOD SAFETY PRACTICES

	Girinka and SBCC (N=64)	Girinka only (N=71)
Milk is boiled before use	84.4%	85.9%
Milk is stored at room temperature in a plastic container	95.3%	93.0%
Milk is kept for more than two hours before it is used	57.8%	50.7%



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## ASF SBCC INTERVENTION ACCOMPLISHMENTS

### GABURA AMATA MUBYEYI

ENHANCING MILK QUALITY AND CONSUMPTION FOR IMPROVED INCOME AND NUTRITION IN RWANDA

- Used formative research and Rwandan expertise to contextualize SBCC messages for the CHW curriculum and materials of counselling cards, brochures and poster
- Gained approval of materials with collaboration for implementation from RBC & NECDP
- Through support from NECDP, gained district level buy-in for adoption of intervention into Annual Action Plan and monthly supervision support for intervention
- Contributed ASF counselling National SBCC strategy for Integrated ECD, Nutrition, and WASH



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## SBCC CHANNELS

### Interpersonal communication

One to-one communication at household level and small group discussions such as the community savings and lending groups & cooperatives with CHWs

### Community mobilization

Public meetings through existing community channels such as the weekly parent evening meetings, community cooking demonstration sessions, public works days and international and national days of recognition

### Print Media

Printed materials of counselling cards, brochures and posters  
CHW training curriculum

### Advocacy

Collaborate with Districts, NECDP, RBC and key stakeholders working in food and nutrition sector through the National technical and sub technical working groups



**USAID**  
FROM THE AMERICAN PEOPLE



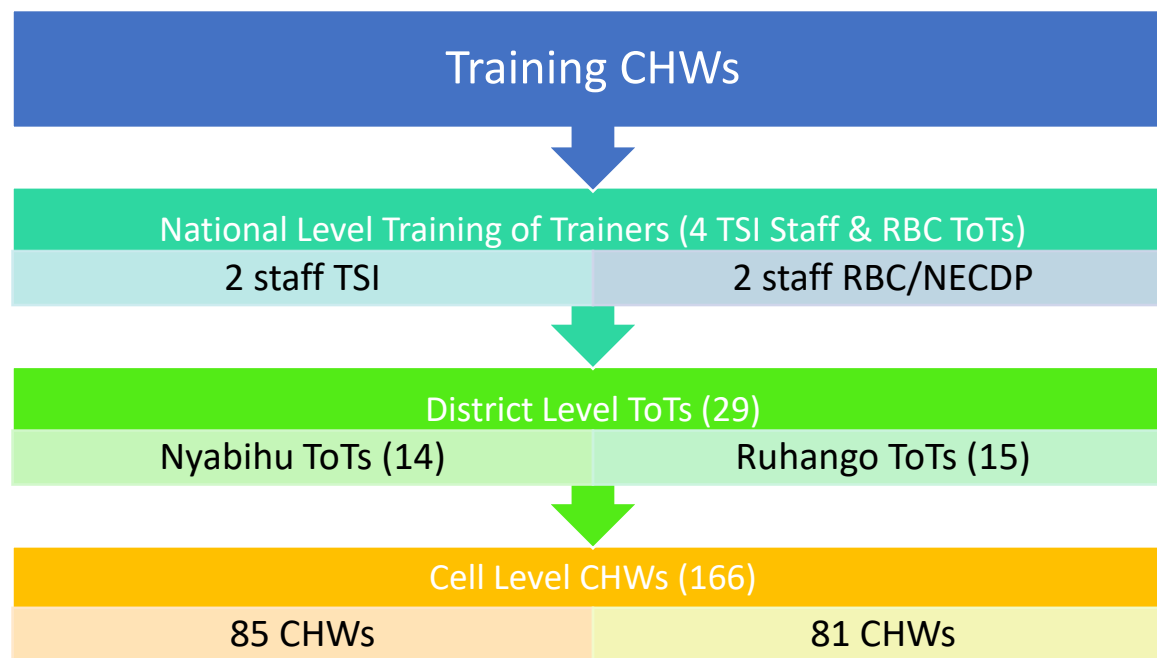


# FEED THE FUTURE

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

## CHW TRAINING STRATEGY

A Cascade Model implemented to provide training to ToTs and delivered in three levels. ToTs chosen as CHW supervisors from Health Centers; CHWs chosen as the 4<sup>th</sup> newly elected CHW at village level responsible for Nutrition and ECD.



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## SBCC KEY MESSAGES

The SBCC Messages were developed for the following 6 key elements:

- Importance and **benefits** of cow's milk and ASF consumption for PLW and young children
- Appropriate daily **quantities** of ASFs and cow's milk for PLW and young children
- Appropriate **time to introduce** ASFs and cow's milk for PLW and young children
- Importance of **male engagement** for maternal and child nutrition and increase of cow's milk and ASF consumption
- Importance of identifying symptoms of **milk allergy** and intolerance and the actions to take
- Importance of **hygiene and safe handling & storage** of fresh milk



**USAID**  
FROM THE AMERICAN PEOPLE







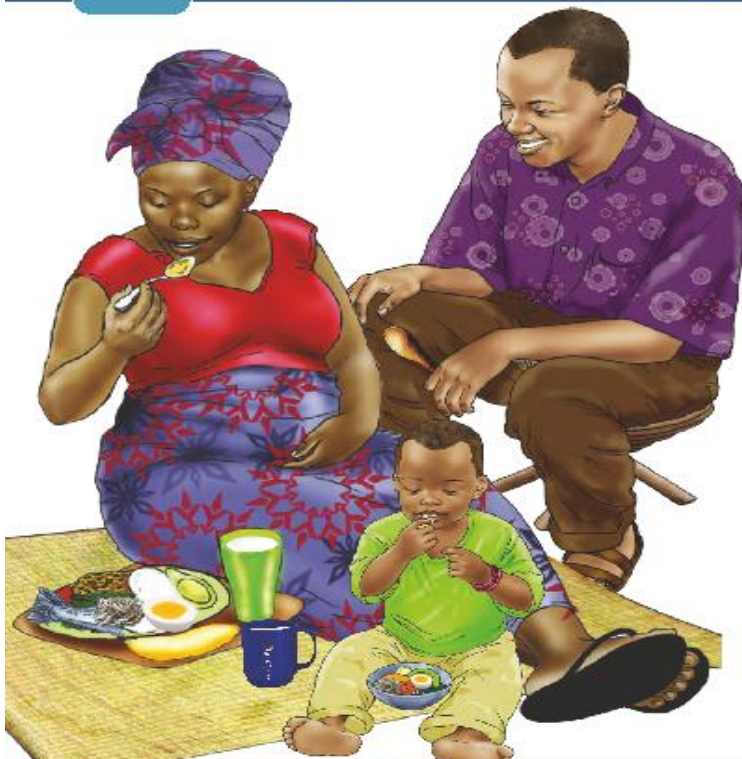
# FEED THE FUTURE

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

## EXAMPLE OF CHW COUNSELLING CARDS

1

Importance and **benefits** of ASFs and milk consumption for Pregnant and Lactating Women and children 1 – 3 ½ years old



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## EXAMPLE OF CHW COUNSELLING CARDS

1

### Importance and **benefits** of ASFs and milk consumption for Pregnant and Lactating Women and children 1 – 3 ½ years old



If adults in the household choose not to consume ASFs and cow's milk due to religious or cultural beliefs, the benefits and importance of cow's milk consumption for PLW and young children should be encouraged and supported by community and religious leaders.

- Drinking at least one cup of cow's milk and eating a variety of foods during lactation and pregnancy helps to meet the protein and micronutrient needs for mom and baby.
- Pregnant and lactating women and children 6 months and older need to eat at least one type of animal source food daily, such as fish, eggs or meat to meet their daily nutrient requirements.
- Milk is rich in calcium needed for bone formation and has fat and proteins needed for children to grow well.
- Cow's milk is a good source of calcium and important during pregnancy because they help your unborn baby's developing bones form properly.
- ASFs provide multiple micronutrients simultaneously. For example, foods such as liver contain iron and vitamin A.



Cow's milk is very good for the mothers during pregnancy and lactation as it is rich in protein (body- building), minerals (preventing disease) and other important nutrients needed to support nutrition and health of both the mother and the baby during pregnancy or when lactating.



**USAID**  
FROM THE AMERICAN PEOPLE





## MONITORING OF IMPLEMENTATION

Monitoring of monthly SBCC activities will ensure that they are implemented as planned. Progress will be measured through the list of indicators monitored monthly via a supervision checklist (to measure practice and attitude indicators):

- Number of indicators relating to milk and ASF consumption included into district action plans by July 2019 (or Dec/Jan Budget revision)
- Number of community activities conducted
- Number of households reached with SBCC messages
- Men's involvement in training at cell and village levels
- Men's involvement in community and household training sessions delivered by CHWs during cooking demonstration, household visits, etc.

## MONTHLY SUPPORTIVE SUPERVISION

**Three Stones Field Coordinators** provide the following support:

- Monthly check- in sessions with Sector ToTs
- Observe selected monthly household visits and community activities
- Facilitate peer- learning in each District
- Facilitate supervision and lesson- learning events in each District

**CHW TOTs** on a monthly basis:

- Support village CHWs with any training updates required
- Observe 2-3 activities per month
- Report attendance, supervision observations and feedback to TSI coordinators

**Village CHWs** on a monthly basis:

- Conduct at least 2 Gabura Amata Mubyeyi activities in their village including HH visits, Cooperative meetings, Parents Evenings, GMP, Community Dialogue, etc.

## OBJECTIVE 2

- To assess and enhance performance and capacity of dairy cooperatives to improve market access for smallholder milk producers

### OVERALL ACCOMPLISHMENTS:

- Conducted AgPOSA assessments of 30 dairy cooperatives to assess performance and capacity gaps
- Selected 4 dairy cooperatives for intensive trainings and mentorship and 16 dairy cooperatives for the market facilitation intervention (“light intervention”)
- Developed the intervention plan and training materials
- Began implementing the dairy cooperatives capacity development interventions



# FEED THE FUTURE

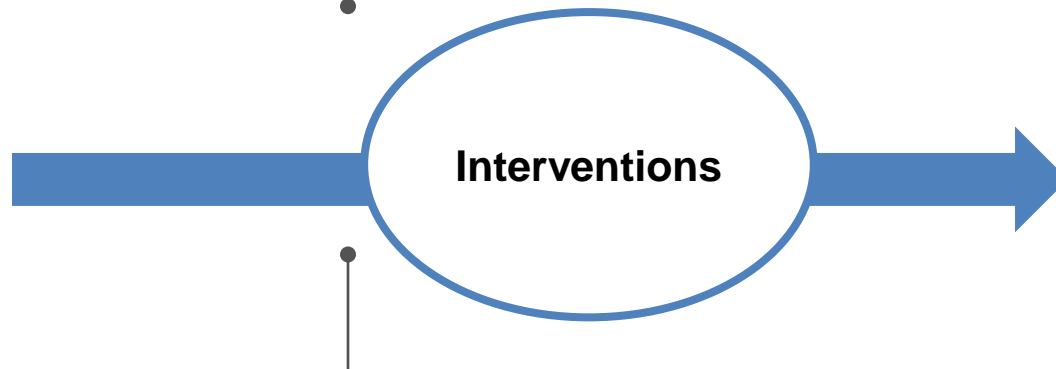
The U.S. Government's Global Hunger & Food Security Initiative

*The AgPOSA  
assessment conducted  
to gauge the  
performance of POs*

*Intensive capacity building  
intervention for 4 POs*

***As a result POs  
will be able to  
effectively grow  
and develop  
their capabilities***

**Capacity  
development  
gaps**



**Effective  
capability  
development**

*Market system facilitation approach for  
16 POs (light touch intervention)*



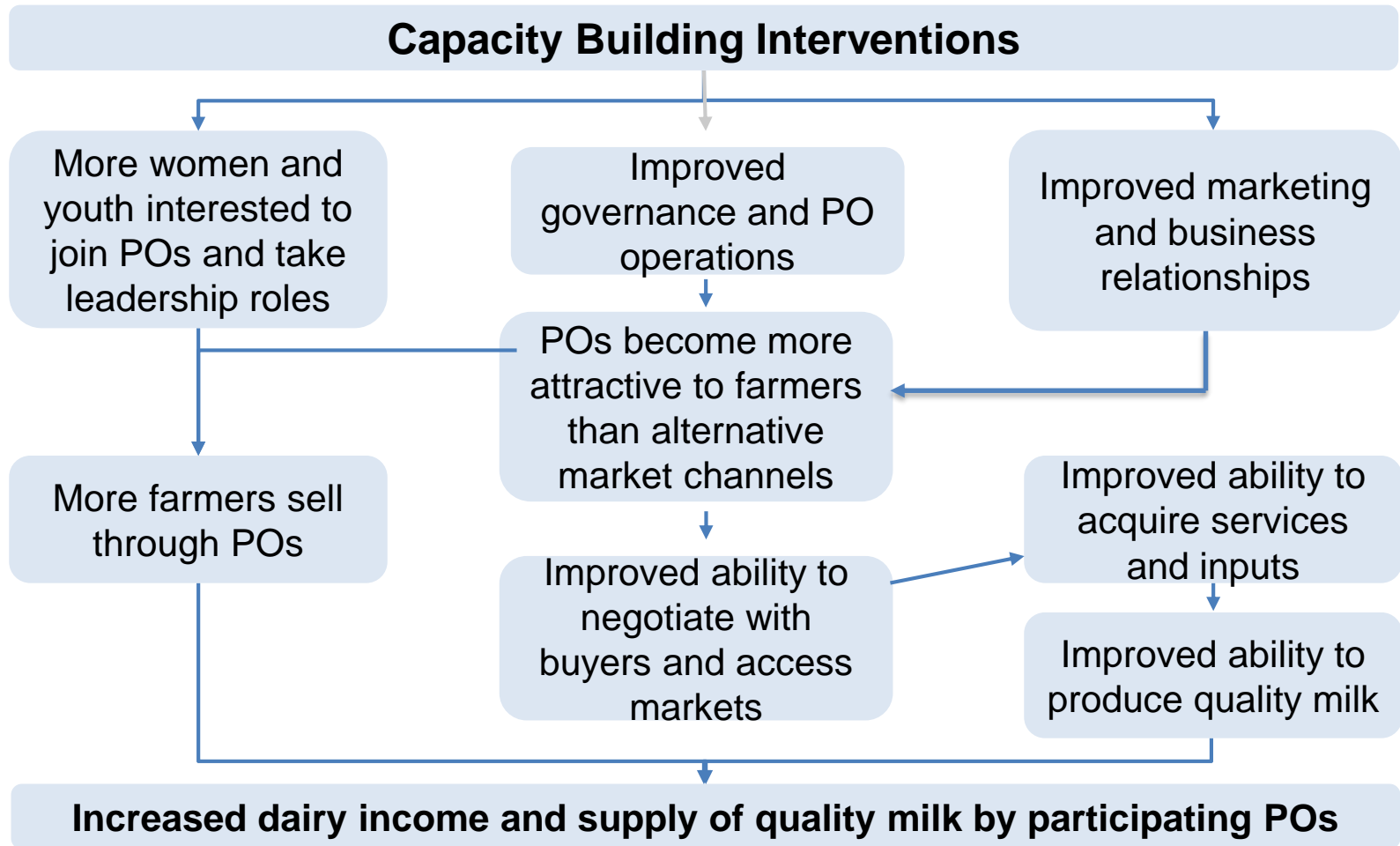
**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## CAPACITY DEVELOPMENT GAPS

DESCRIPTION	CATEGORY	STATUS	RESOLUTION
Financial health	Business process	Poor financial reporting  Poor record keeping	Build the capacity of BOD and staff on financial management and use of ICT for data management
Effective and transparent PO leadership and management	Change management	Low PO supervision and control Poor governance structures Low representation of women and youth	Build the capacity of BOD and management on leadership and governance, strategic management
Access to dairy inputs and services	Business process	Lack or ineffective BDS services vis-à-vis hub model approach	In-house or outsourced service providers to be sought after a business case and due diligence conducted



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## Improved Financial Management

Intended Intervention	Action	Emerging outcomes
Improved financial management	Desktop computers for data capture and analysis	4 POs started to use computers for data capture, manipulation and management. Financial decisions are taken based on data and not intuition.
	Business performance management tool to enter and analyze financial data	
	Strategy development on how to reduce costs and increase milk supply	Business performance reviews conducted for 4 PO BODs for the FY 2018, drivers for profitability were discussed about and how to attain them



**USAID**  
FROM THE AMERICAN PEOPLE





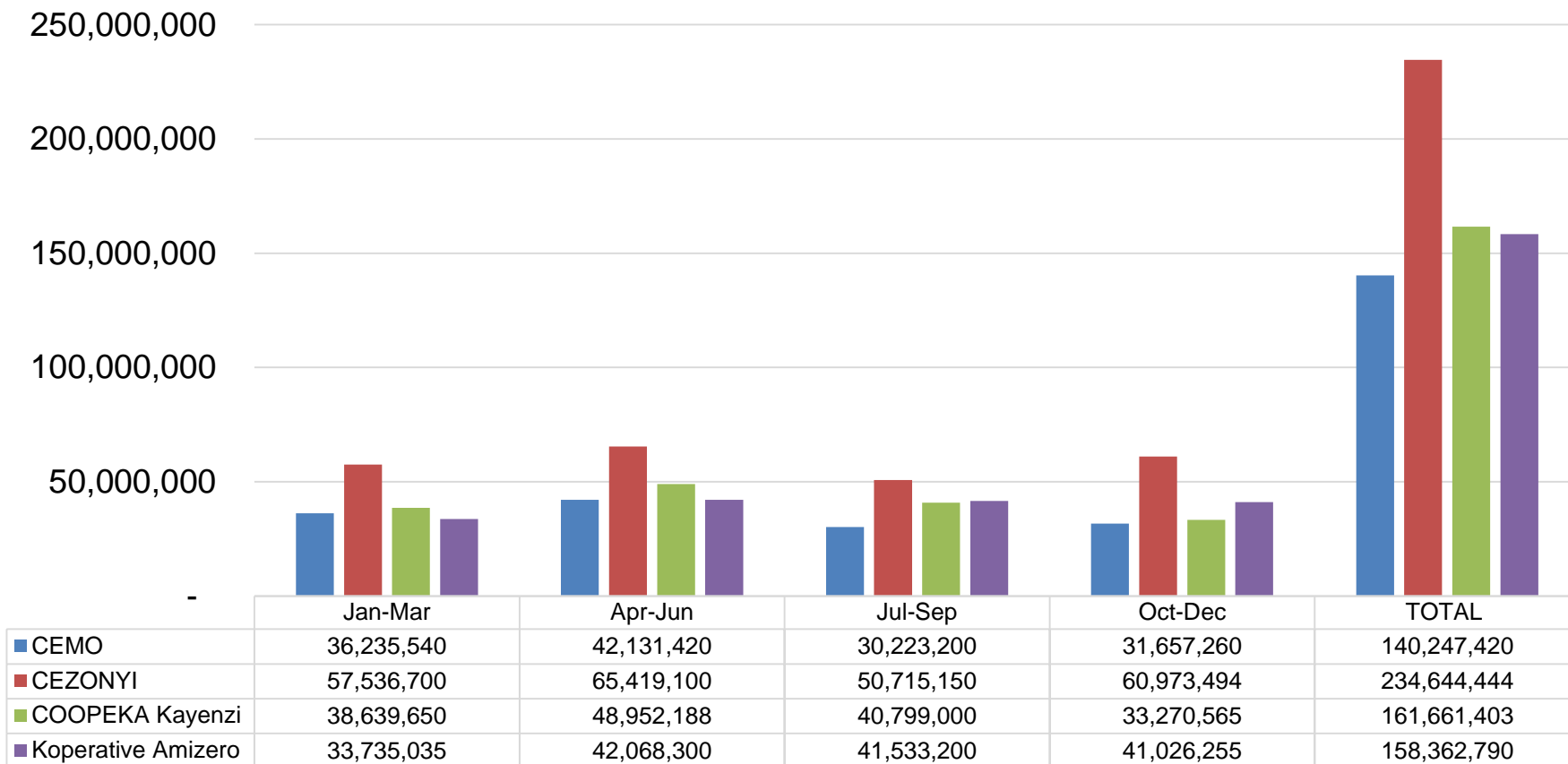


# FEED THE FUTURE

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

## Improved Financial Management Cont'd

### Milk Sales (Frw)



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## Learning and knowledge sharing

Intended Intervention	Action	Emerging outcomes
Learning and Knowledge Sharing of PO BODs, management and role model farmers	Exposure visits to best performing POs	Visits are mutual beneficial since they involve sharing of knowledge, experiences and idea.
	Peer to peer visits among the 4 POs undergoing the intensive capacity building intervention	Resulting to improved governance and management as well as efficient PO operations.



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## BDS Services

Intended Intervention	Action	Emerging outcomes
Linkages with business development services	Linkage and training of 4 POs with RTN SP for the GoR portal Irembo for POs to become telecenter agents.	Increased ownership of members as well as non-members who seek the Irembo services at the POs.
	Formalization of relationships between POs and Coopers Ltd.	Revenues generated to the POs through the use of the platform.  Agrovet and training services increase revenues generated at the PO level and productivity of farmers.



**USAID**  
FROM THE AMERICAN PEOPLE







# FEED THE FUTURE

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

## Business Development Services



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

## NEXT STEPS

- Interventions continue
- PhD student to defend PhD proposal and collect data. Objectives include:
  - Estimation of costs and benefits to farmers of supplying milk that meets the dairy best practices
  - Identification of farmer constraints to supplying that meets quality standards
  - Assessment of consumer demand for quality milk
- Feedback to the Rwanda National Development Services on the results of the System Dynamics modelling on the cost and benefits to different value chain actors
- Microbiological analysis of milk – different milk outlets (coliforms, *Staphylococcus aureus*, *Listeria monocytogenes* and *Salmonella* spp.)



**USAID**  
FROM THE AMERICAN PEOPLE





# FEED THE FUTURE

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

[www.feedthefuture.gov](http://www.feedthefuture.gov)



**USAID**  
FROM THE AMERICAN PEOPLE

