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Enhancing milk quality and consumption for improved income and nutrition in Rwanda (Jan 2017 – Dec 2019)

Emily Ouma, Valerie Flax, Edgar Twine, Olivier Kamana
and Julie Kariuki

Project inception workshop, Kigali, Rwanda, 7 March 2017



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PROJECT TEAM

■ Interdisciplinary team

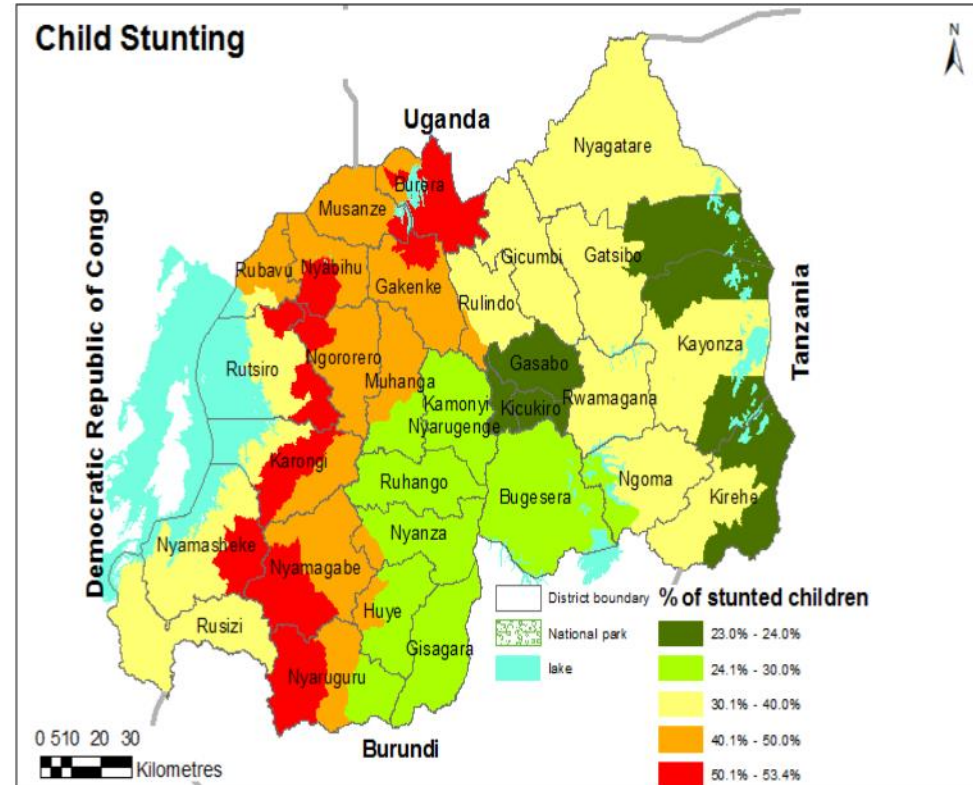
- Human Nutrition – Valerie Flax
- Food Science and Public Health – Olivier Kamana
- Agribusiness development – Julie Kariuki
- Agricultural Economics – Emily Ouma and Edgar Twine





RATIONALE

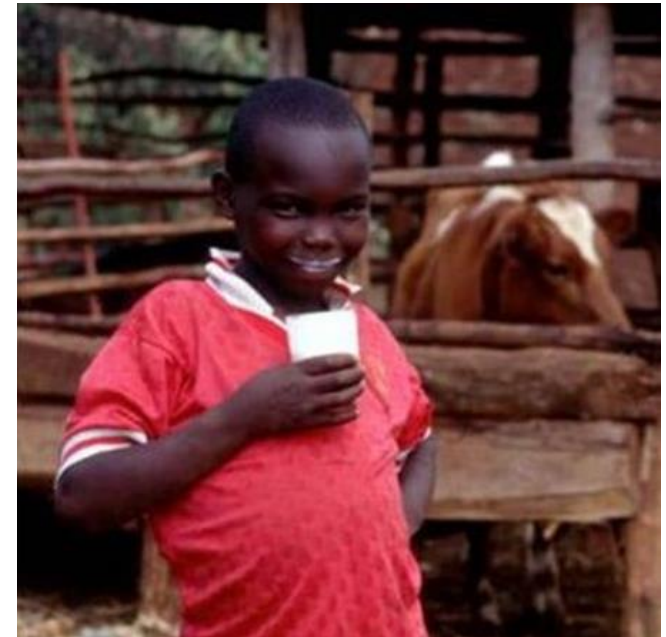
- High levels of malnutrition in children in Rwanda (CFSVA, 2015)
 - 37% of children less than 5 years of age are stunted
 - Only 30% of children aged 6-23 months meet the requirements for a minimum acceptable diet based on dietary diversity





RATIONALE

- Increased consumption of animal source foods (ASFs) - key pathway to improving dietary diversity and child stature.
- To achieve desired nutrition outcomes → promotion of ASF by integrating ASF in household diets.
- Focus – milk consumption from cattle



DAIRY VALUE CHAIN DEVELOPMENT INITIATIVES

- Dairy development considered by the GoR as promising solution for income generation and nutrition (National Dairy Strategy).
- Efforts through “Girinka program”:
 - Livestock asset transfer program
 - Objective to increase household income and reduce child malnutrition among poor households
 - Since 2006, up to 226,240 cattle distributed





DAIRY VALUE CHAIN DEVELOPMENT INITIATIVES

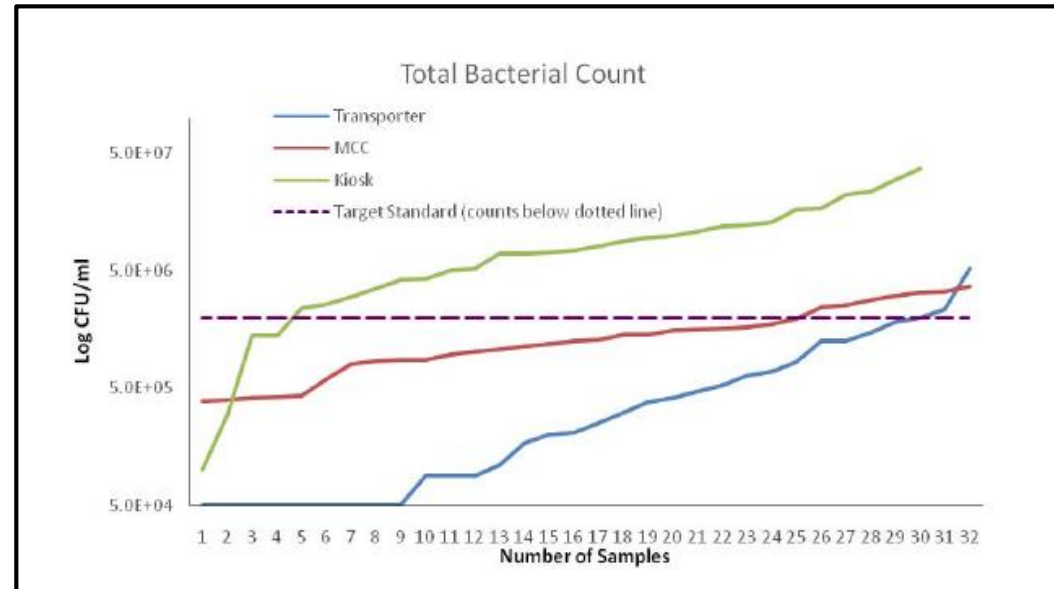
- One cup of milk per child - MINAGRI
- Other dairy value chain development initiatives – USAID FtF funded RDCPII
 - Improving dairy competitiveness in the region and milk consumption promotion (“shisha wumva”-RDCPII/MINAGRI).
 - Successes include technology adoption at farm, cooperative and processor levels for improving productivity and milk quality
- IFAD – Rwanda Dairy Development





CHALLENGES IN THE DAIRY VALUE CHAIN

- 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 base linking dairy value chain interventions to nutrition outcomes



Source: Doyle et al, 2015 (Microbiological analysis of raw milk), African Journal of Food Science and Technology





PROJECT OBJECTIVES

- Generate evidence on interventions aimed at improving dairy income and consumption of milk in Rwanda. Specifically, the project will;
 - evaluate the impact of a nutrition education intervention on ASF consumption and nutrition outcomes among children (12-23 months) and pregnant and lactating women
 - assess and enhance performance and capacity of dairy cooperatives to improve market access for smallholder farmers
 - evaluate the costs and benefits to value chain agents of supplying milk that meets the Seal of Quality standards





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RESEARCH APPROACH AND CAPACITY DEVELOPMENT INITIATIVES



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OBJECTIVE 1

Evaluate the impact of a nutrition education intervention on animal source food (ASF) consumption and nutrition outcomes among children 12-23 months of age and pregnant and lactating women





RANDOMIZE 60 VILLAGES IN 2-4 DISTRICTS

Households with a child 12-23 month and eligible for Girinka program

Did not
receive a cow
(n=240)

Received a
cow
(n=240)

Received a
cow +
nutrition
education
(n=240)





DATA SOURCES

- Rapid formative data collection to identify enablers and barriers to consumption of milk and dairy products – generation of appropriate ASF and dietary promotion messages for men and women
- Cross sectional household surveys conducted at baseline and endline, analysed for nutrition outcome indicators using Difference in Difference approach.
- Qualitative interviews with implementers and participants



■ Nutrition education intervention

- Importance of nutrition – how to make decisions w.r.t food consumption especially milk
- Behaviour change messaging on consumption of ASF, especially milk – increasing dietary diversity





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OBJECTIVE 2

To assess and enhance performance and capacity of dairy cooperatives to improve market access for smallholder farmers



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- Identify capacity gaps - assess current capacity levels of 30 dairy cooperatives using POSA tool (ILRI/TechnoServe) and AgroPro – performance assessment tool (Land O' Lakes)
- POSA dimensions:
 - Engagement with output market
 - Financial health
 - Effective and transparent leadership and management
 - Member loyalty
 - Access to production inputs and services





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- Targeted capacity building and mentorship of 4 dairy cooperatives on aspects of business management, governance, gender/youth integration.
- 16 cooperatives: market systems facilitation approach to enable linkages with business development services
- Quasi-experimental design – one group pretest post-test approach



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OBJECTIVE 3

To evaluate the costs and benefits to value chain agents of supplying milk that meets the seal of quality (SOQ) standards





SEAL OF QUALITY (SOQ)

- An initiative launched in May 2013 by RDCP II
- The SOQ is a set of quality requirements to be certified for
- Follows the food chain approach from primary production to final consumption
- Good hygienic practices : general principles of milk hygiene
- Quality of raw materials
- Milk handling
- Working environment
- Considering quality and safety





SEAL OF QUALITY (SOQ)

- SOQ Kits
- Auto-control materials
- Appropriate equipments for milk handling
- Maintenance of hygienic working conditions



Cost implications





SEAL OF QUALITY (SOQ)

- **Feasibility of the SOQ certification scheme and the distribution of its costs and benefits along the dairy value chain**
 - Determine the feasibility of SOQ technologies/practices for milk producers, processors and retailers using capital budgeting methods such as benefit-cost ratios and NPV
 - *Ex ante* determination of the distribution of costs and benefits of SOQ along the chain using system dynamics modeling





SEAL OF QUALITY (SOQ)

- **Effect of Rwanda's seal of quality certification scheme on the cost structure of smallholder dairy farms**
 - Econometric estimation of total cost and factor cost share equations.
- **Demand for safe milk: health risk reduction and willingness to pay for Rwanda's seal of quality certification**
 - Analyze reduction in health risks from consumption of SOQ certified milk
 - Analyze consumer WTP for SOQ certification

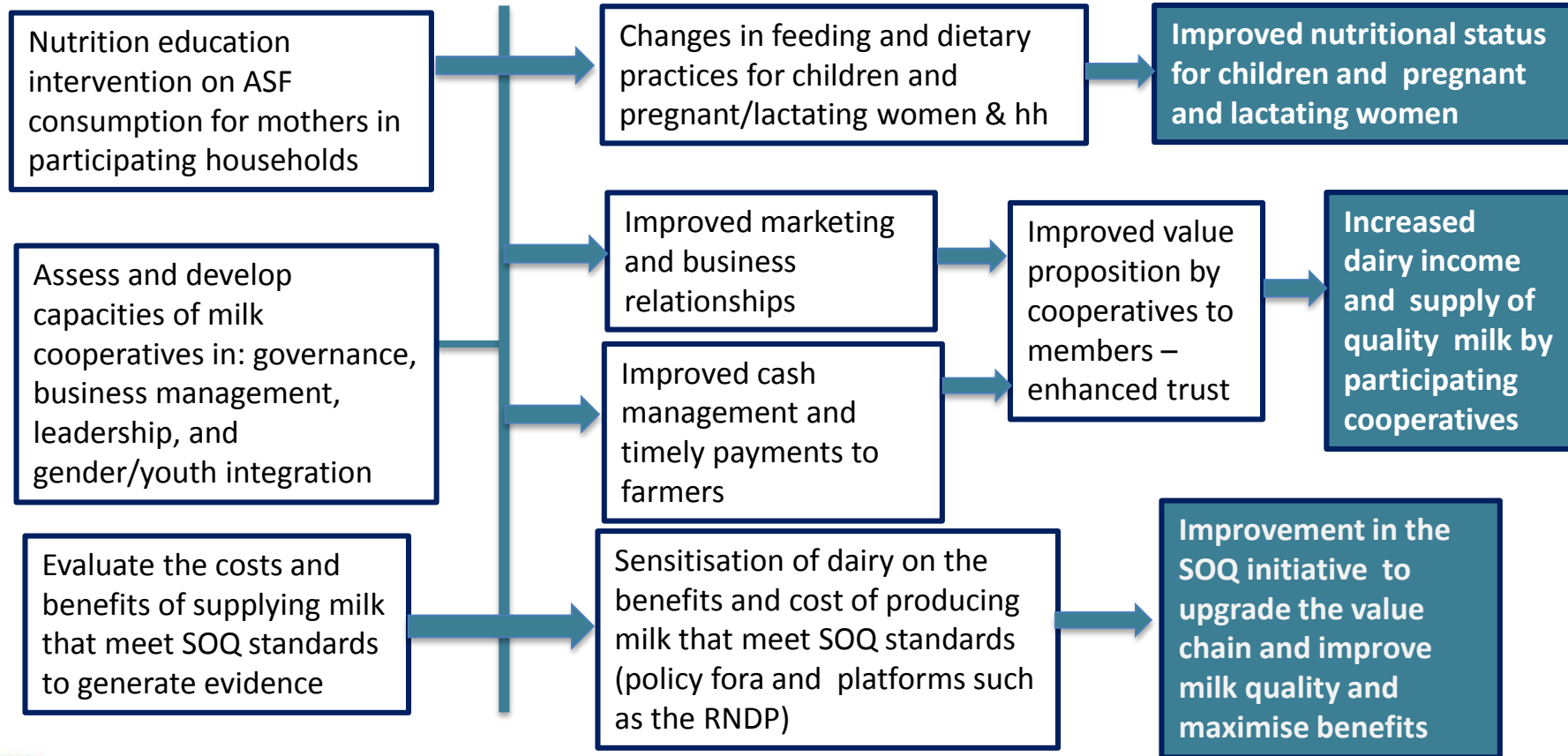




PROJECT IMPACT PATHWAY

Outputs

Outcomes





2017 WORKPLAN

Activity	Timeline
Partnership engagements and staff recruitment	Jan-March 2017
Project planning and inception meeting	6 th - 10 th March 2017
Finalisation of site selection	March 2017
Development of survey protocols, testing, identification and training of enumerators	April-May 2017
Baseline household data collection and dairy cooperative capacity assessments	June – Aug 2017
Baseline data analyses and reporting	Sep – Nov 2017
SOQ cost and benefit surveys	Sep – Nov 2017
Generation of the ASF and dietary promotion messages for the nutrition intervention	Nov-Dec 2017
Development of capacity development strategy for the dairy coops	Dec 2017





POTENTIAL PARTNERS

- Ministry of Agriculture and Animal Resources
- Rwanda Agriculture Board
- Ministry of Health – including CHWs
- Society for Family Health (SFH)
- Rwanda National Dairy Platform
- Rwanda Agriculture and Livestock Inspection and Certification Services of MINAGRI
- Private sector partners
- NGOs





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