Piloting a smallholder broiler production model in Rwanda

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Elisabeth Garner
GASL 2019, K State, Manhattan, Kansas
Acknowledgements

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Overview

• Introduction of Tworore Inkoko (TI)
  • Goals of the project
  • Training and Program Model

• Livability
• Profit
• Nutrition
• Next steps
Why Tworore Inkoko?

Key development issues:
- Limited supply of high quality protein sources in rural Rwanda
- Lack of HH income to purchase nutritious foods of animal origin

Key broiler chicken opportunities:
- Highly efficient feed conversion rates
  - Broiler chickens are extremely efficient in converting feed to meat (FCR-1.6) when using high quality feed
  - FCRs of other livestock: Dairy cattle (8); Beef (6); Pigs (3); Sheep (4.5); Rabbits (3.75)
- Minimal land needed
  - Production requires only 0.1 m²/chicken
  - Rwanda most densely populated country in SSA
Tworore Inkoko, Twunguoke

Hybrid Broiler Production
- Sustainable intensification
- Including small poor rural farmers

Value Chain Development
- Production
- Inputs
- Sales

Food Security
- Income
- Nutrition/Dietary Diversity
- Access

Public + Private

Gill et al. 2019
Target Beneficiaries

- **First order beneficiaries** are poor households (Ubudehe 1 & 2) with HH broilers- nutrition & income;
- **Second order beneficiaries** are non-producer HHs that benefit from a reduced price in chicken meat;
- **Third order beneficiaries** are those that benefit from improved poultry value chains as TI model scales.

Gill et al. 2019
TI Smallholder Production Model
Recruitment & Enrollment

- Males and females pass at same rate across all sectors
- Gender-responsive adaptations
- 99% Retention rate among enrolled farmers
- Goal 750 farmers by end of project

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<th>Sector - cell</th>
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<th>Number Trained</th>
<th>Officially enrolled</th>
<th>Percentage of trained, enrolled</th>
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Gill et al. 2019
Average livability (%) of broilers raised

- % of birds alive at harvest
- Livability around industry standard
- Lessons learned over time
  - Feed
    - Ascites
  - Biosecurity
  - Light, air and warmth

![Graph showing bird livability with target of 90%](Gill et al. 2019)
Farmer net average profit per flock versus sale price and cost of production (COP)

- Farmers increased income by USD $50 per month
- Lessons learned over time
  - Market fluctuations
  - Cont. education & Tech support
  - Keeping COP down
Farmer Gross Profit per Flock Number

Gill et al. 2019
Broilers Set Aside for Home Consumption

• Farmers:
  • Keep birds to eat
  • Trade with other farmers
  • Share with neighbors

• Lessons learned
  • Nutrition education and training
  • Influence of market price

Gill et al. 2019
Continuing to develop the value chain...

• Supply-side
  • Chick Supply
  • Feed

• Sales-side
  • Understanding market fluctuations
  • Improving post-harvest storage and processing

• Scaling up or scaling out?
  • Continue to add farmers (scale up)
  • Focus on supply or market (scale out)
Thank you!

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