Update on the sheep and goat meat value chain transformation in Ethiopia project

Barbara Rischkowsky

Small Ruminant value chain Transformation in Ethiopia (SmaRT Ethiopia) workshop on developing intervention packages for small ruminant value chain target sites, Addis Ababa, 19-20 April 2017
Small Ruminant Value chain Transformation (VCT) in Ethiopia

• Transformation of selected livestock commodity VCs was part of the CGIAR Research Program (CRP) Livestock & Fish (2012-2016)
• VCT will be continued under CRP Livestock Agri-Food Systems (2017-2019) in the Flagship Livestock Livelihoods and Agri-food Systems (LLAFS)
• In Ethiopia sheep and goat meat was selected as target VC
• ICARDA is leading sheep and goat meat VCT at target sites in Ethiopia jointly implemented with ILRI, NARES and since 2016 SLU)
• IFAD co-funded the SR VCT in Ethiopia with a country grant for ICARDA, ILRI and NARS (April 2015 – April 2018)
The Value Chain (VC) Approach

The VC approach

• provides a framework for integrating and prioritizing technical and institutional interventions at the different VC stages
• identifies bottlenecks and opportunities for improving value chain performance
• analyses linkages and value addition along the value chain
• aims at developing market-oriented meat production with defined business models
SR meat VCD in Ethiopia: framework developed for implementation

1. Consultative site selection process through national and regional consultation meetings and site visits (June-Oct 2012)

2. Complimentary reviews and assessments (July 2012-Dec 2014)
   - Situational analysis
   - Desk study on best practices and successes & failures of feed interventions
   - Community-based breeding programs – state of the art and research priorities
   - Sheep research in Ethiopia: Review of projects and thoughts on strategies
   - Goat Research and Development in Ethiopia: Review of projects and thoughts on strategies
   - Small Ruminant Fattening systems in Ethiopia
   - Partnership consultations and landscaping (continuous)
   - Production Systems Studies at sites
   - Feed Resource Assessment (FEAST) and Feed technology screening (TechFit) 14 village reports on feed resources and technology assessment for 3 sites
## Selected sites for sheep and goat value chains

<table>
<thead>
<tr>
<th>Selected sites</th>
<th>Region</th>
<th>District</th>
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<tbody>
<tr>
<td><strong>Goat Value Chains</strong></td>
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<td>Abergelle</td>
<td>Amhara/Tigray</td>
<td>Abergelle (Waq) Tanqua Abergelle</td>
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<td>Negelle Borena</td>
<td>Oromia</td>
<td>Yabello (Borana)</td>
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<td><strong>Goat and Sheep Value Chain</strong></td>
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<td>Shinelle</td>
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<td><strong>Sheep Value Chains</strong></td>
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<td>Menz</td>
<td>Amhara</td>
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<td>Horro</td>
<td>Oromia</td>
<td>Horro/Shambu</td>
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<td>East Tigray</td>
<td>Tigray</td>
<td>Atsbi</td>
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<td>Doyogena</td>
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<td>Doyogena</td>
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<td>Bonga</td>
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4. Multi-stakeholder meetings for prioritization and planning of site-specific interventions and research (March/April 2013)
Outcomes of VCA & multi-stakeholder meetings (cont.)

Key constraints identified

THE CORE PROBLEM

Poor performance of sheep and goat value chains

THE IMPACT

Poverty  Malnutrition  Hidden hunger

WHOLE VALUE CHAIN

INPUTS & SERVICES  PRODUCTION  PROCESSING  MARKETING  CONSUMPTION

Lack of effective policies and institutions  Lack of research and technology transfer  Insufficient feed resources (climate and land availability)  Degradation of resource base  Disease pressure  Poorly developed markets

Inadequate input supplies  Lack of knowledge and skills in SR management  Feed shortage and/or utilization  High morbidity and mortality  Weak linkages between producers and markets

Low income of VC actors  High market prices  Food insecurity  ASF quality and safety
Prioritized key interventions across sites

- Need based capacity building on SR management for extension agents and producers (input supply and production)

- **Animal Health (input supply and production):**
  - Diagnostic and epidemiological studies for key diseases, assessment of economics, capacity building of producers
  - Delivery services: delivery of quality vaccines, and drugs, organizing delivery of sustainable services

- Feeding (input supply and production)

- Site specific interventions based on available feed resources (adapted forages or shrubs, efficient utilization of crop residues, improved fattening)
Outcomes of VCA & multi-stakeholder meetings (cont.)

Prioritized key interventions across sites

- Organization/Institutional Interventions related to marketing:
  - Strengthening/Establishing producer marketing cooperatives
  - Multi stakeholders platform to identify the major bottlenecks, find common solutions and create market linkages between producers and other actors including awareness of market demands
  - Providing market actors, in particular producers, with up-to-date market price information

- Processing
  - Capacity building on transport, slaughtering, safe preparation and handling of ASF
Key priority Animal health: identify disease priorities

- Systematic literature review on disease priorities (2015)
  - Review of peer-reviewed papers published over the last 15 years
  - Overall report and 5 papers published

- Investigate disease constraints as perceived by producers (2015)
  - Series of trainings on participatory epidemiology and gender
  - Conducting 92 focus group discussions in 23 sites
  - Disease priorities per site identified
  - Important gender issues in small ruminant management documented
  - Plan and start implementation of HH survey:
    - 646 interviews conducted
    - 2111 samples collected and tested for PPR and CCPP

- Serosurvey on reproductive diseases in 3 sites (2015)

- Finalize HH survey and compile data (2016)
  - Stakeholder workshop to present key findings
  - Identify what interventions needed in each site
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5. Development of research and development partnerships for implementing prioritized interventions
Partnerships

Crucial R4D partners

- National and regional research institutes (research centers next to the sites)
- Bureaus of Agriculture at district levels
- Ethiopian Universities (Jimma, Haramaya, Addis Ababa, Hawassa)
- Veterinary department in MoLF
- National Animal Health Diagnostic and Investigation Center (NAHDIC)
- Embrapa, Boku, SLU
- FAO
- OSU, CSU, University of Hohenheim
Partnerships (cont.)

Established/completed

- LIVES: integrated sheep VC sites in Atsbi with shared responsibilities
- ILRI livestock master plan development: scenarios for SR VC
- SFFF: Assessment of safety of milk fermentation techniques
- CRP DS: Forage development and seed delivery in Doyogana
- SNV/LIVES: MSP in Atsbi
- Africa Rising: crop residue utilization; food-feed cultivars; joint trainings; FEAST and TechFit tool improvement
- FAO: employment opportunities in SR VCs; VCD project

Planned

- IFAD: collaboration with PCDPII and RUFIPII
- SNV, LMD: Capacity building program on improved husbandry measures for farmers; (support for farmer and women cooperatives through LMD calls)
- FAO: PPR control
  (SNV: fattening system guide for farmers)
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6. Testing/Implementation/Evaluation of prioritized best-bet interventions (July 2013-Dec 2016) and integrated capacity development
Examples of best-bet technologies/interventions

Animal Health: addressing disease priorities in 2016/2017

- Interventions protocols developed (respiratory disease, reproductive diseases, GIT parasites, coenurosis)
- Successful testing of coenurosis protocol in Borana
- Training on coenurosis diagnosis at AAU for site veterinarians
- Mission to investigate abortion storms in Abergelle
- Training on post-mortem examination at NAHDIC for site veterinarians (January 2017)
- Sero-survery on CCPP in Borana
- Mission on CCPP investigation in Borana (February 2017)
Examples of best-bet technologies/interventions

**CBBP**

- Continuation of community-based breeding programs (CBBP) in three sites (Menz, Horro and Bonga)
- Implementation of sheep and goat breeding programs at four new sites (Doyogena, Atsbi, 2 Abergelle sites)
  - Performance recording
  - Community selection and sharing of breeding rams
  - Data Recording and Management System (DREMS) incl. mobile data recording in the field developed with Embrapa
  - Establishment of breeding cooperatives
  - Reproductive technologies for rapid dissemination
Examples of best-bet technologies/interventions

Site specific improved feeding systems

- Assessments of local feed resources and feeding systems
- Develop sheep fattening systems targeting Orthodox festivity markets
  - First round targeted Christmas & second round Eastern (in progress)
  - Based on assessment of locally available feed resources
  - Optimizing balanced rations developed by local NARS centers
  - Introducing improved low-cost feeding & watering equipment
  - Strengthening capacity and skills of community in sheep fattening
- Research on utilization of locally available forage options, e.g. Desho grass for higher rainfall areas
- Improving crop residues from grain legumes
  - through variety selection for nutritional quality of straw
  - low-cost chemical treatments
Impressions from on-farm testing of fattening systems
Examples of best-bet technologies/interventions

Smart marketing

• combining access to market information and voluntary organization (formal or informal) of smallholder farmers as experimental variables

• assessing the combined and individual effect of access to information and membership in farmers’ associations.

• market information is being provided on:
  o trait preferences,
  o price expectations,
  o quantity demanded,
  o quantity supplied,
  o availability of and access to market services, and
  o key social [e.g., extraordinary social occasions] and environmental [e.g., profound shifts in the weather] phenomena will be monitored, synthesized and communicated to all key actors along the value chain within a manageable scope.
Gender integrative research

• 3 projects designed to integrate gender research into technology testing
  o sheep fattening (Jane),
  o smart marketing (Girma)
  o animal disease identification (Barbara W and Wole)

• Capacity assessment tool was tested and completed in Ethiopia and Tanzania
  o Report on capacity of partners in Ethiopia (brief)

• Next step: Training modules developed with transition international based on needs of partners
## Best-bet technologies/interventions by site

<table>
<thead>
<tr>
<th>Planned interventions</th>
<th>Horro</th>
<th>Menz</th>
<th>Doyo-gena</th>
<th>Atsbi</th>
<th>Bonga</th>
<th>Aber-gelle</th>
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<th>Shi-nele</th>
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<td>Smart marketing</td>
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<td>Farmer cooperatives</td>
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<td>Artificial Insemination</td>
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<td>Coenurosis control</td>
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<td>GIT parasites</td>
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<td>Reproductive diseases</td>
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<td>Disease awareness field trainings</td>
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<td>Demonstrations of dual purpose grain legumes</td>
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**Note:** Best-bet technologies/interventions by site.
Integrated capacity development

Post-Graduate training

- 8 PhD on breeding/modelling
- 2 MSc students on production system/breed characterization
- 1 MSc on goat marketing
- SFFF: 3 MSc students on pathogens in slaughterhouses
- 1 PhD on Desho grass (with Jimma)
- 1 PhD on crop residue utilization with Africa Rising
- 2 MSc students on food-feed traits in lentils and chickpeas
- 3 MSc students on sheep fattening
- 1 PhD on quantitative VCA?
- 1 MSc on smart marketing
- 1 PhD on animal health
Integrated capacity development (cont.)

**Short-term training Courses**

- Rapid VC and food safety assessments (ILRI partner project SFFF), in Addis and Awassa, Nov. 2012
- Writeshop to complete VCA reports, in Addis, Feb. 2013
- Molecular Characterization of SR genetic resources in Addis and Holetta, Sept. 2013
- Data recording and management system and estimation of breeding values, in Addis, Sept. 2013, March 2016
- Quantitative VCA, in Addis, Nov. 2013
- FEAST and TechFit, in Addis, Nov. 2013
- Reproductive technologies, 2014-2016
Theory of Change for VCT (MEL pilot)

- In Feb. 2015, Theory of Change (ToC) pathways describing expected changes in main stakeholders were developed in Nairobi workshop (WS) for Ethiopia and Tanzania
- ToC for SR VC validated through multi-stakeholder WS in Addis in March 2015
- Monitoring framework for expected changes in the main VC stakeholders was developed
- Framework was piloted in Ethiopia and Tanzania
- Baseline data collected from producers, research partners, and extension services targeting expected 1 year changes in the 4 highland sites (March-Aug. 2015)
- It was planned to monitor changes after 1 year
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4. Multi-stakeholder meetings for prioritization and planning of site-specific interventions and research (March/April 2013)
5. Development of research and development partnerships for implementing prioritized interventions
7. Theory of Change and impact pathways for Ethiopian VC and MEL (2014-2016)
Development of business models for sheep and goat value chains

1. Breeding sires from CBBPs – breeders linked to producers
2. High price fattened male sheep for festivities in Ethiopia (Eastern, New Year, Christmas) - fatteners (producers, specialized farmers (e.g. women & youth) or cooperatives linked to traders
3. High quality younger goat and sheep for abattoirs (quick offtake): producers linked to abattoirs
Thank you!

http://livestock-fish.wikispaces.com/VCD+Ethiopia
http://livestockfish.cgiar.org/category/countries/ethiopia
The CGIAR Research Program on Livestock aims to increase the productivity and profitability of livestock agri-food systems in sustainable ways, making meat, milk and eggs more available and affordable across the developing world.

livestock.cgiar.org

The program thanks all donors and organizations which globally support its work through their contributions to the CGIAR system.
Consultative site selection process

Step 1: Geographical targeting - identification of eligible regions/districts using GIS

Step 2: Stakeholder consultation at national level (ground-truthing of Step 1, defining soft selection criteria and identifying sites)

Step 3: Regional stakeholder consultation to refine site selection and prepare site visits

Step 4: Site visits applying agreed minimum checklist to validate selected sites

Step 5: Start of research activities in the selected sites
Step 2: Stakeholder consultation at national level
6 July 2012 in Addis

- Discuss outcome of step 1 (geographical targeting)
- Define and apply soft criteria
- Propose list of eligible sites for sheep and goat VCs matching with agreed criteria
Outputs from rapid VCA at seven sites

- Toolkit for rapid VCA for small ruminants (in Ethiopia)
- 8 site reports from rapid VCA including challenges and proposed interventions ([http://livestockfish.cgiar.org/2014/04/10/ethiopia-vcreports/](http://livestockfish.cgiar.org/2014/04/10/ethiopia-vcreports/))
- Synthesis report on rapid VCA
- Review of Ethiopia small ruminant value chain rapid assessment: from a gender perspective
- Safe Food, Fair Food qualitative integrated assessment of small ruminant value chains in Ethiopia
- Review of SFFF assessments from a gender perspective
Quantitative Value Chain analysis (benchmarking)

• Toolkit for SR VC in Ethiopia developed (incl. additional food safety assessment module)
• Sampling strategy developed
• Mobile data collection with ODK tablets
• Producer data (collected as part of the in-depth VCA) will also serve as baseline
• Data collection at seven sites completed
Outcomes of VCA & multi-stakeholder meetings (cont.)

Across-site research topics

- Making sheep and goat breeding programs work for smallholder farmers in selected sites (incl. data recording)
- Testing mobile technology for data recording
- Characterization of goat genetic resources combined with identification of adaptive traits
- Testing tools for feed assessment and prioritization of feed interventions
- Improving crop residues from grain legumes through selection and utilization
- Research on diversifying adaptive forage species for highlands
- Optimizing sheep (and goat) fattening systems
- Animals health diagnostics
- Research on institutions: innovation platforms and marketing strategies and animal health delivery systems
Examples of best-bet technologies/interventions

CBBP: Benefits from sheep breeding programs at 3 old sites in Ethiopia

- At three sites (Bonga, Horro and Menz), 450 rams have been selected and used on 7500 ewes
- The project covers 477 households in 6 villages with more than 3000 people directly benefiting from the scheme
- Previously the ‘best’ fast growing ram lambs were sold and slaughtered (‘negative selection’), they are now kept to improve the breeding stock.
- More births, better growth, and reduced mortality in participating community flocks
- In Bonga breeding rams are sold for more than double the price of meat sheep of similar condition
Examples of best-bet technologies/interventions

CBBP: Benefits from sheep breeding programs at 3 sites in Ethiopia

• High demand for breeding rams from neighboring communities, other government programs and NGOs.
• Most of the participating households in Menz graduated from the government-run safety net program that meets short-term food needs through emergency relief. They use income from sheep sales to buy food.
• Sheep production has become a main line of business for many community members in which they invest.
• The farmers formed cooperatives to organize the breeding program and purchase/sales of rams (Bonga cooperative has capital of around 60,000 USD)
Examples of best-bet technologies/interventions

Smart marketing

**Hypothesis:** Information and collective action increase market participation and market returns.
Expected outcomes

Intermediate outcomes
• Priority VC constraints lessened or resolved
• Partnerships with major stakeholders established and additional investments aligned
• Herd productivity increased by 25% (measured as increase in offtake (proportion of animals (kg) sold or consumed in a year of total animals (kg) kept)

Ultimate outcomes (after scaling phase)
• 7000 SR producing households at seven sites participate in the program
• Farmers and other value chain actors have increased access to livestock inputs and outputs services
• Increase in annual sheep and goat meat production of 250 tonnes for urban and export markets
Acknowledgements

- IFAD Grant 2000000764: Improving the Performance of Pro-Poor Value Chains of Sheep and Goats for Enhanced Livelihood, Food and Nutrition Security in Ethiopia
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