



RESEARCH  
PROGRAM ON  
Livestock

*More meat, milk and eggs by and for the poor*

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

*Barbara Rischkowsky*

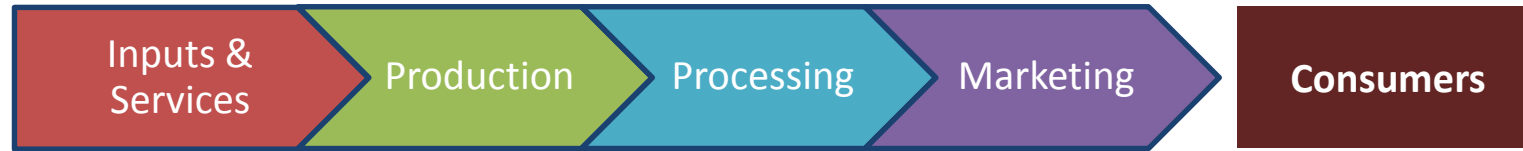
Small Ruminant value chain Transformation in Ethiopia (SmaRT Ethiopia) workshop on developing intervention packages for small ruminant value chain target sites, Addis Ababa, 19-20 April 2017



# 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

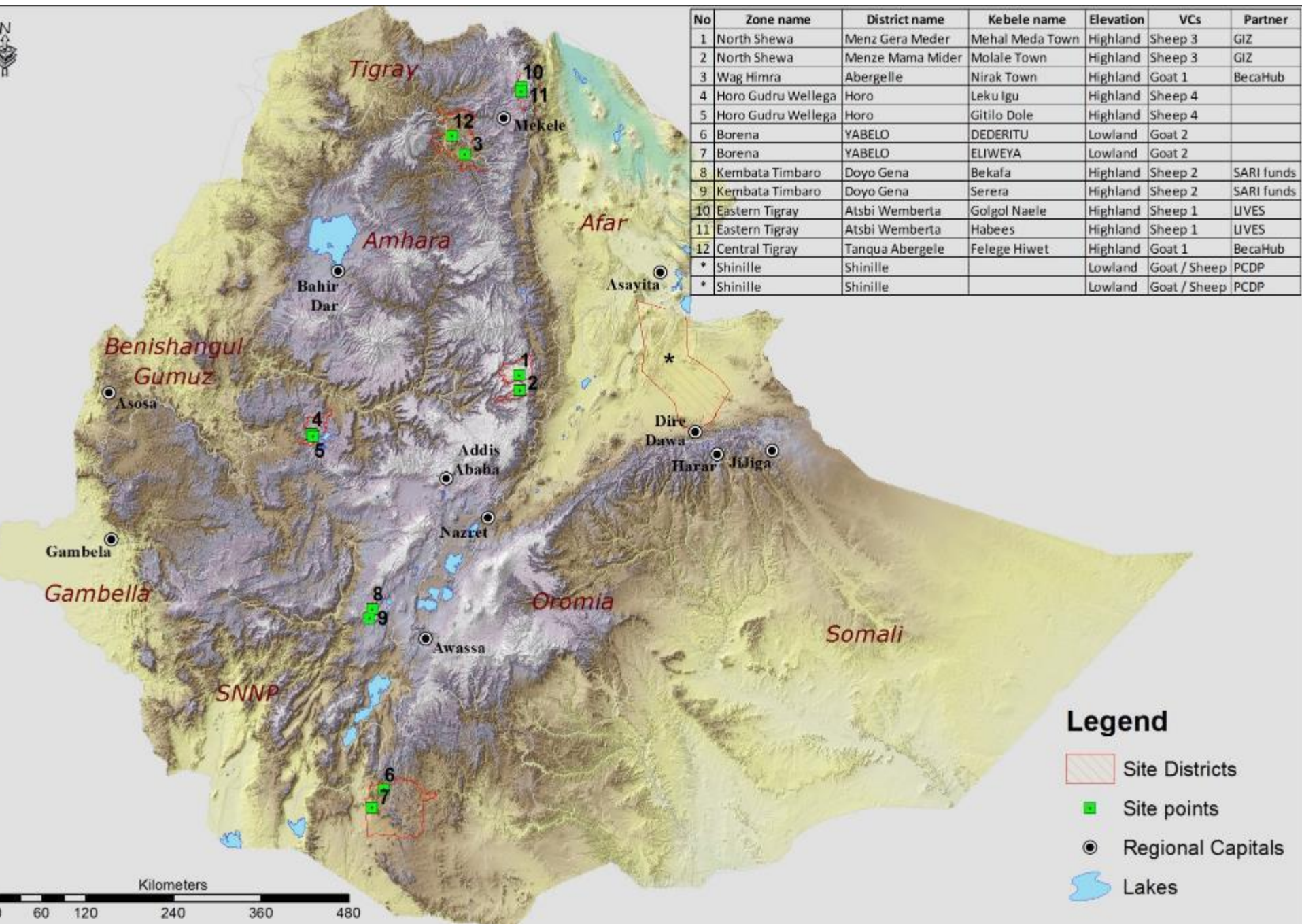
# SR meat VCD in Ethiopia: framework developed for implementation

- 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

Selected sites	Region	District
<b>Goat Value Chains</b>		
Abergelle	Amhara/ Tigray	Abergelle (Waq) Tanqua Abergelle
Negelle Borena	Oromia	Yabello (Borana)
<b>Goat and Sheep Value Chain</b>		
Shinelle	Somali	Shinelle
<b>Sheep Value Chains</b>		
Menz	Amhara	Molale and Mehal Meda
Horro	Oromia	Horro/Shambu
East Tigray	Tigray	Atsbi
Doyogena	SNNP	Doyogena
<b>Bonga</b>	<b>SNNP</b>	<b>Bonga</b>

# Selected sites for sheep and goat value chains



## Legend

-  Site Districts
-  Site points
-  Regional Capitals
-  Lakes

Kilometers

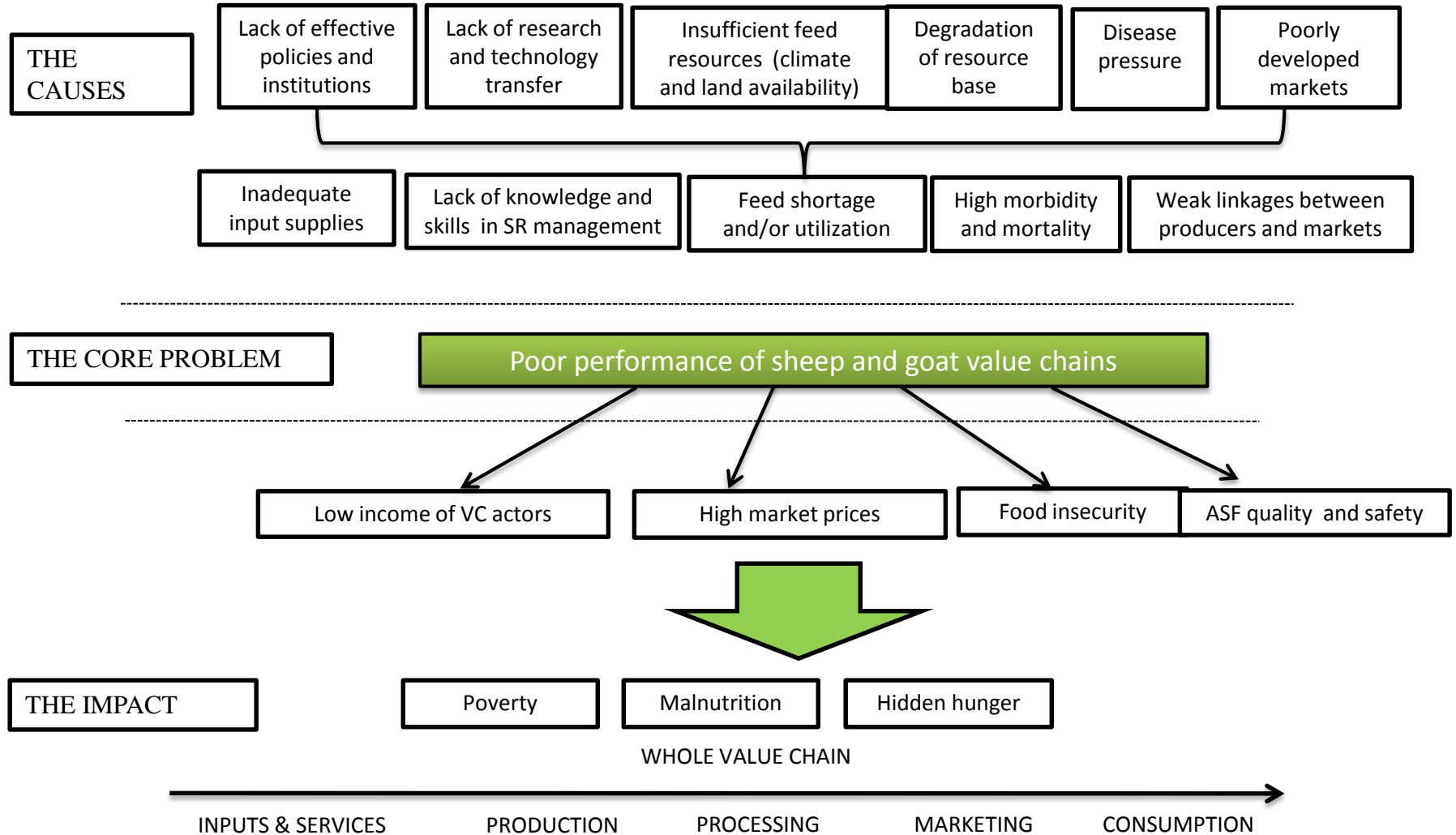
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# SR meat VCD in Ethiopia: framework developed for implementation

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)
3. **Rapid Value Chain Analysis (VCA) and Rapid Integrated Food Safety assessments at seven sites (Nov 2012-May 2013)**
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





# Outcomes of VCA & multi-stakeholder meetings (cont.)

## 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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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**

# 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 RUFIPPII
- 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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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
6. **Testing/Implementation/Evaluation of prioritized best-bet interventions (July 2013-Dec 2016) and integrated capacity development**
7. **Theory of Change and impact pathways for Ethiopian VC and related Monitoring, Evaluation and Learning (2014-2016)**

# 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-survey 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:
  - trait preferences,
  - price expectations,
  - quantity demanded,
  - quantity supplied,
  - availability of and access to market services, and
  - 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
  - sheep fattening (Jane),
  - smart marketing (Girma)
  - animal disease identification (Barbara W and Wole)
- Capacity assessment tool was tested and completed in Ethiopia and Tanzania
  - 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

Planned interventions	Horro	Menz	Doyo- gena	Atsbi	Bonga	Aber- gelle	Borana	Shi- nele
Smart marketing		X						
Sheep fattening follow-up	X	X	X		X			
Milk value addition						X	X	
Community-based breeding programs	X	X	X	X	X	X		
Farmer cooperatives	X	X	X	X	X	X		
Artificial Insemination		X	X		X			
Coenurosis control				X			X	
GIT parasites	X	X	X					
Respiratory Diseases	X	X	X	X		X	X	
Reproductive diseases			X			X		
Disease awareness field trainings	X	X	X	X	X	X	X	
Business models								
Demonstrations of dual purpose grain legumes		X	X					
Forage dissemination			X					

# 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
- Phenotypic Characterization of SR genetic resources, in Addis, Dec. 2012
- 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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5. Development of research and development partnerships for implementing prioritized interventions
6. Testing/Implementation/Evaluation of prioritized best-bet interventions and integrated Cap Dev (July 2013-Dec 2016)
7. Theory of Change and impact pathways for Ethiopian VC and MEL (2014-2016)
8. **Development of business models and testing of integrated packages of proven best-bet technologies/interventions (2017-2019)**

# 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>

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# 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/>)
- 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

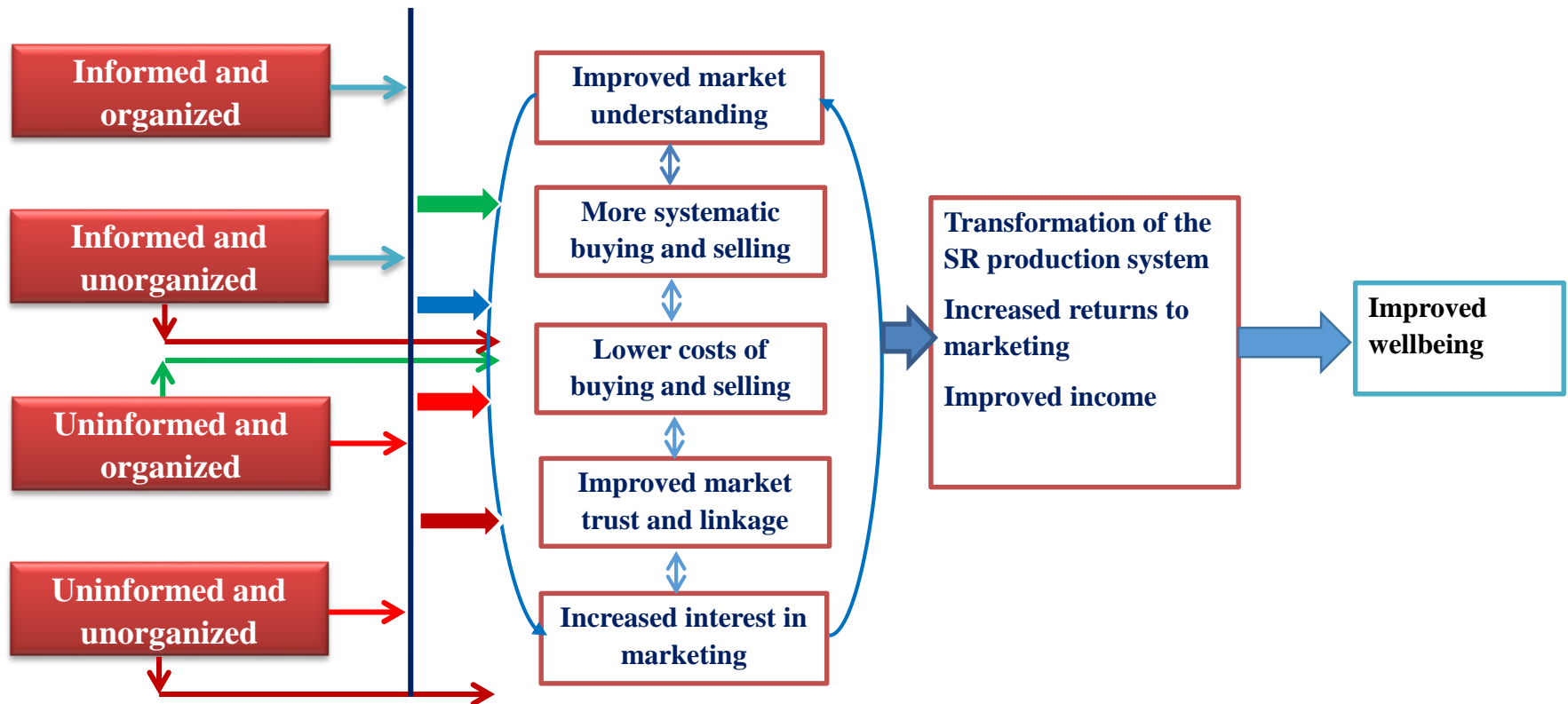
- High demand for breeding rams from neighboring communities, other government programs and NGOs.
- Most of the participating households in Menz graduated from the government-run safety net program that meets short-term food needs through emergency relief. They use income from sheep sales to buy food.
- 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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