Volunteer Name: Michael J Lauer

Country: Ethiopia

Country project: Grain crops production and sector development

Host: Ethiopian Catholic Church – Social Development Coordination Office of Meki – Shashemene City (ECC-SDCOM)

Venues: Shashemene, Kelo Duro, Ropi Sinta, Alentena Sirbo, Duro Huiuko

Audience: Employees of ECC-SDCOM, Government Development Agents and Smallholder farmers

Number of people trained/assisted: 310

Date/duration: 27 November – 11 December 2015

Assignment Objectives as in SOW

1. **Improve harvesting and post-harvest technologies and introduction of any new overseas' innovations on harvesting, threshing/shelling, handling, management of grains and stalks/straws, food safety, etc**
2. **Benefit 90 smallholder farmers and 7-10 keys staffs (as a TOT) of the host and key stakeholders**
3. **Develop and submit simple guidelines on post-harvest management of rain fed grains**

Achievement of the assignment objectives:

1) Improve harvest and post harvest practices

Emphasized Principles and Best Practices on:

1) Grain standards and Grades
2) 2) Harvest timing and methods
3) 3) Transport to home
4) 4) Threshing and cleaning
5) 5) Drying
6) 6) Storage and Pest management

Emphasized an integrated approach

- Discussion topics included:
- identification of grain maturity
- timing and progression of insect damage
- methods to ameliorate insect and rodent damage to grain
- improved gotera design and construction
- benefit and proper use of triple-ply (PICS) bags for effective, safe, chemical-free, long-term storage of grain

Achievement of the assignment objectives:

1) Improve harvest and post harvest practices

Additional topics:

- hazards and risks to family of Aluminum Phosphide fumigant tablets
- proper use of insecticidal powders for grain protection and retreatment requirements.

Demonstrated:

- use of hand-held shellers as an alternative to threshing with sticks
- grain quality (levels of mold, insect damage, rodent damage) of both new harvest and 13-month storage grain with local samples
- proper inspection and use of PICS bags
- use of moisture meter to determine grain moisture content.
- use of a rapid soil test to determine soil pH, N, P and K
- information on maize weevil, the Lessor Grain Borer and Larger Grain Borer

Achievement of the assignment objectives:

2) Benefit 90 Smallholder farmers and 7 -10 staff

Venue	Date	Total	Males	Females
Training of Trainers Shashemene Catholic Church Meeting Hall	2 Dec	23	22	1
Kelo Duro Cooperative Meeting Hall	3 Dec	80	49	31
Ropi Sinta Cooperative Meeting Hall	4 Dec	52	38	14
Alentena Sirbo Cooperative Meeting Hall	7 Dec	112	82	30
Duro Huiuko Cooperative Meeting Hall	8 Dec	32	21	11
On farm training: highland area and Siraro area (NOT COUNTING FARMERS THAT ATTENDED TRAINING SESSIONS)	30 Nov-1 Dec	11	10	1
Total		310	222	88

Achievement of the assignment objectives:

3) Develop and submit simple guidelines on post-harvest management of rain fed grains

Soft copies of the following provided to ECC-SDCOM

Key training files

- 1 Harvest and post-harvest management to reduce grain loss-Com
- 2-Plans-CornSheller_Metal
- 3-Plans-CornSheller_Wood
- 4-Plans-Improved gotera
- 5-Guidelines for grain harvest and preservation
- 5-Plans simple metal grain silos
- Collection Point Session-Compiled
- CropConditioningHandbook
- grain_storage_africa
- Larger or lessor gran borer
- Post_Harvest_Compendium_-_MAIZE
- Seed and Grain storge
- Storage Pests Jimma zone
- Storagein JimmaZone
- World Food Programme Harvest Book (Intro and Section 1)
- World Food Programme Harvest Book (Section 2)
- World Food Programme Harvest Book (Section 3 - 4)
- World Food Programme Harvest Book (Section 5)
- World Food Programme Harvest Book (Section 6 - 9)

Background and supplemental files

- 12-Field Security Plan- Ethiopia
- 5102950763_82175d7cb8_b
- 5102951489_b35843ab8a_b
- 5102952157_c5f967ddb9_b
- 5103544688_2af97595ee_b
- 5103546502_9f4a272ca7_z
- Ethiopian Research Directory2012
- EthiopianSoilsFAO
- Gabriel and Hundie 2006
- Hermetic storage CAF paper
- Hybrid_Maize_Production_Manual,_May_2014
- MissingFoods10_web
- Non-chemical on-farm hermetic maize storage in East Afr
- policy-brief_cimmyt2012
- post harves grain mgt. Abebe. H
- Post HarvestLosses1
- Post HarvestLosses2
- Presentation_De_Groote
- Protection of Grain
- Quality losses report part 2 11 July
- seed_enterprises_enhacement_and_developme
- SnapBean and Rhizobia Ethiopia2015
- Soils of the rift valley2006
- StorageHandbookEastAfrica
- Storing Grains in Ethiopia
- Sulfur-distribution-in-five-Ethiopian-Rift-Valle
- Tadess
- Traditional structures
- Wheat growth and physiology

- Module 1 - On-farm
- Module 2 - Collection Point
- Module 3 - Warehouse
- Collection Point Session 1
- Collection Point Session 2
- Collection point Session 3
- Collection Point Session 4
- FN - Collection Point 1
- FN - Collection Point 2
- FN - Collection Point 3
- FN - Collection Point 4
- FN - On-farm 1
- FN - On-farm 2
- FN - On-farm 3
- FN - On-farm 4
- FN - On-farm 5
- FN - On-farm 6
- FN - Warehouse session 1
- FN - Warehouse session 2
- FN - Warehouse session 3
- FN - Warehouse session 4
- FN - Warehouse session 5
- FN - Warehouse session 6
- On-farm session 1
- On-farm session 1a
- On-farm session 2
- On-farm session 3
- On-farm session 3a
- On-farm session 4
- On-farm session 5
- On-farm session 6
- On-farm session 6a
- Warehouse session 1
- Warehouse session 2
- Warehouse session 3
- Warehouse session 4
- Warehouse session 5
- Warehouse session 6

Anticipated Impact

1. Application of Best Practices will reduce losses due to insects, molds, birds, rodents and theft beginning at crop maturity. Proper harvest, handling, threshing, drying, and storage will minimize pest damage providing more high quality grain for home consumption, and possibly marketing. Marketing high quality grain may occur at the farmer's discretion and be of such a quality as to serve more developed grain markets that reward quality grain with a higher price thus enhancing smallholder income. Exposure of smallholder farmers and their families to toxic fumigants will be reduced. The training and materials will allow trainers to reinforce smallholder training and extend training to additional farmers.
2. Trainers are enabled to continue the training of smallholders. They understand the concerns with Aluminum Phosphide and the opportunity offered by PICS bags. Smallholders will adopt some of the principles and practices offered but experience suggests there may also be reluctance to move from traditional practices. They need strong and frequent reinforcement on the hazards of Aluminum Phosphide tablets, repeated training on PICS bags and access to PICS bags. It is expected that they will adopt the PICS technology
3. Trainers will refer to training and supplemental materials to continue to extend support of new technologies and Best Practices to additional farmers. With strong reinforcement and additional training farmers will increasingly apply Best Practices and improved technologies to enhance their food security and improve their grain marketing opportunities and economic standing




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Recommendations to CRS/USAID for future volunteer assistance

1. **Training should be renewed within 2 years to reinvigorate trainers and to continue to introduce more advanced harvest, threshing, drying and storage technologies to smallholders. Many smallholder had never received training in this area**
2. **Soil conservation training annually. Soil is highly degraded requires intense effort to move towards sustainability**
3. **Crop residue management, crop rotation and cover crops to enhance water conservation and soil health**
4. **Plan advanced training on Farmer cooperative organization and structure to bring them to a higher level of independence and self-sufficiency. Deliver in 2-3 years**
5. **Maximum impact will be realized if training is properly timed, i.e. at planting for agronomy, at harvest for grain quality**
6. **Monitoring of insect populations: larger grain borer in particular for impact on hermetic grain storage methods**

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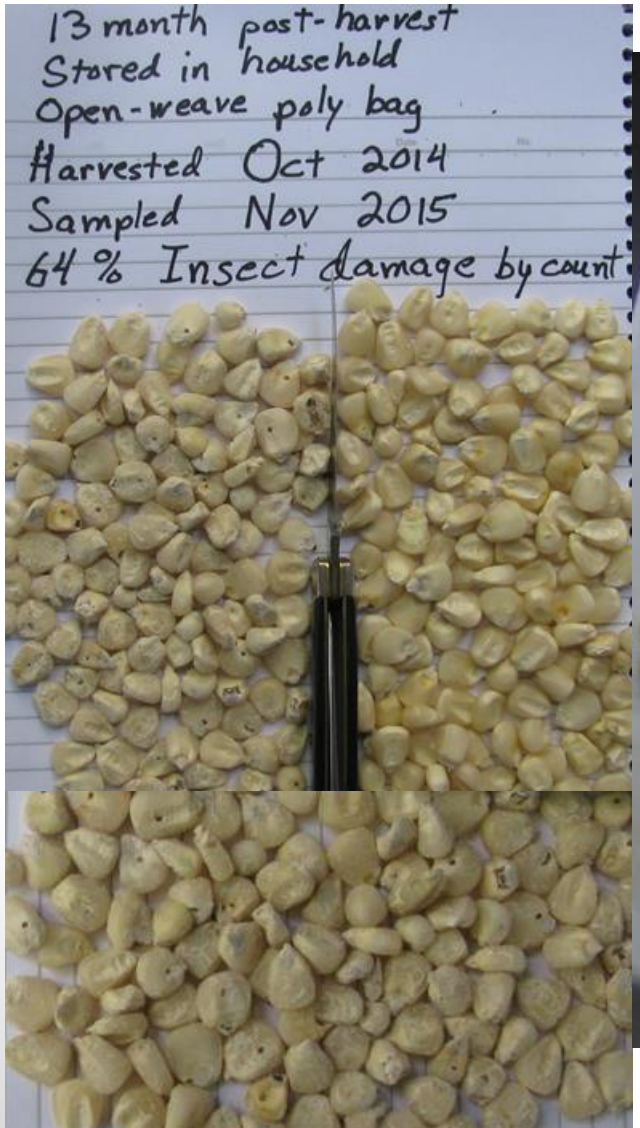

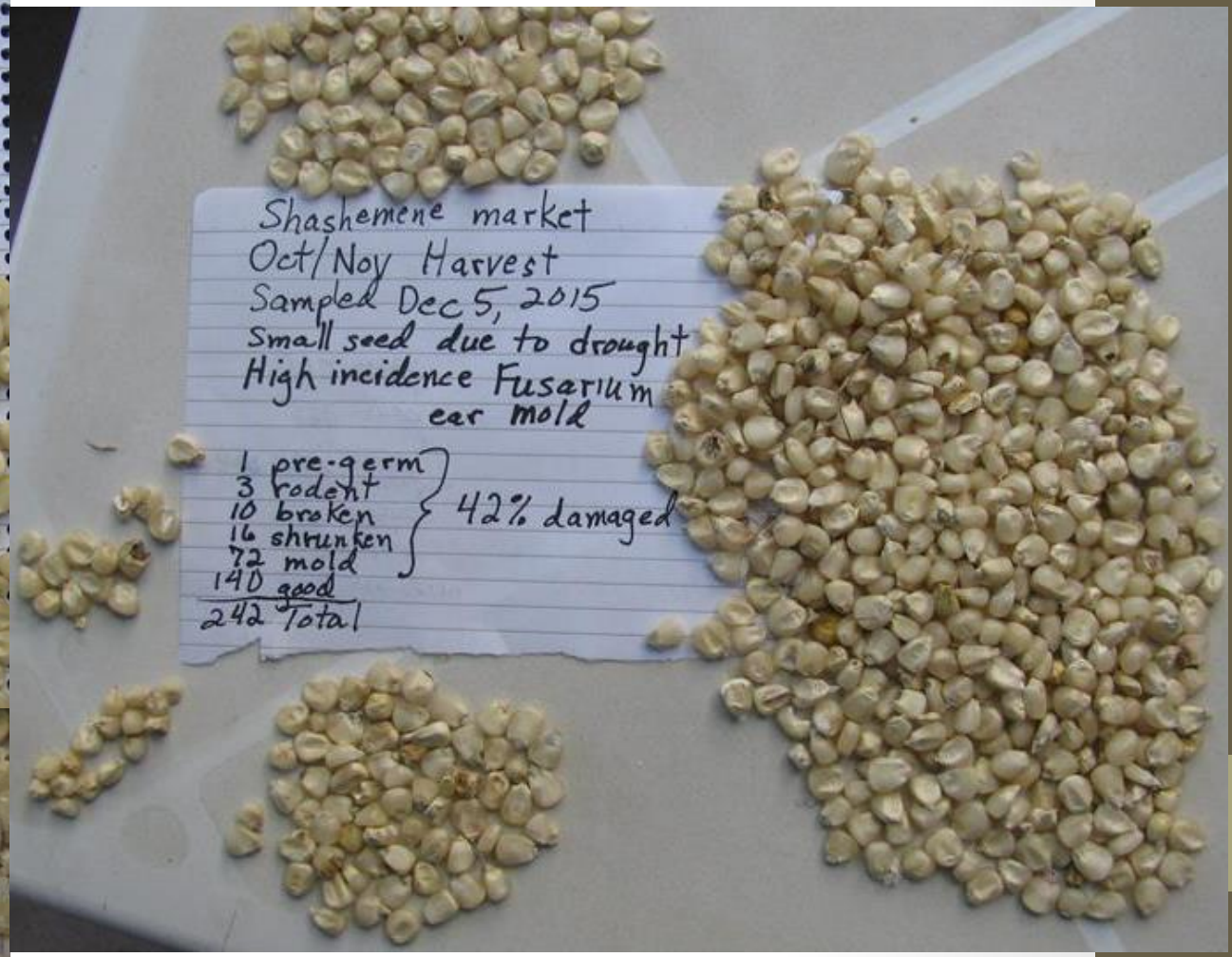

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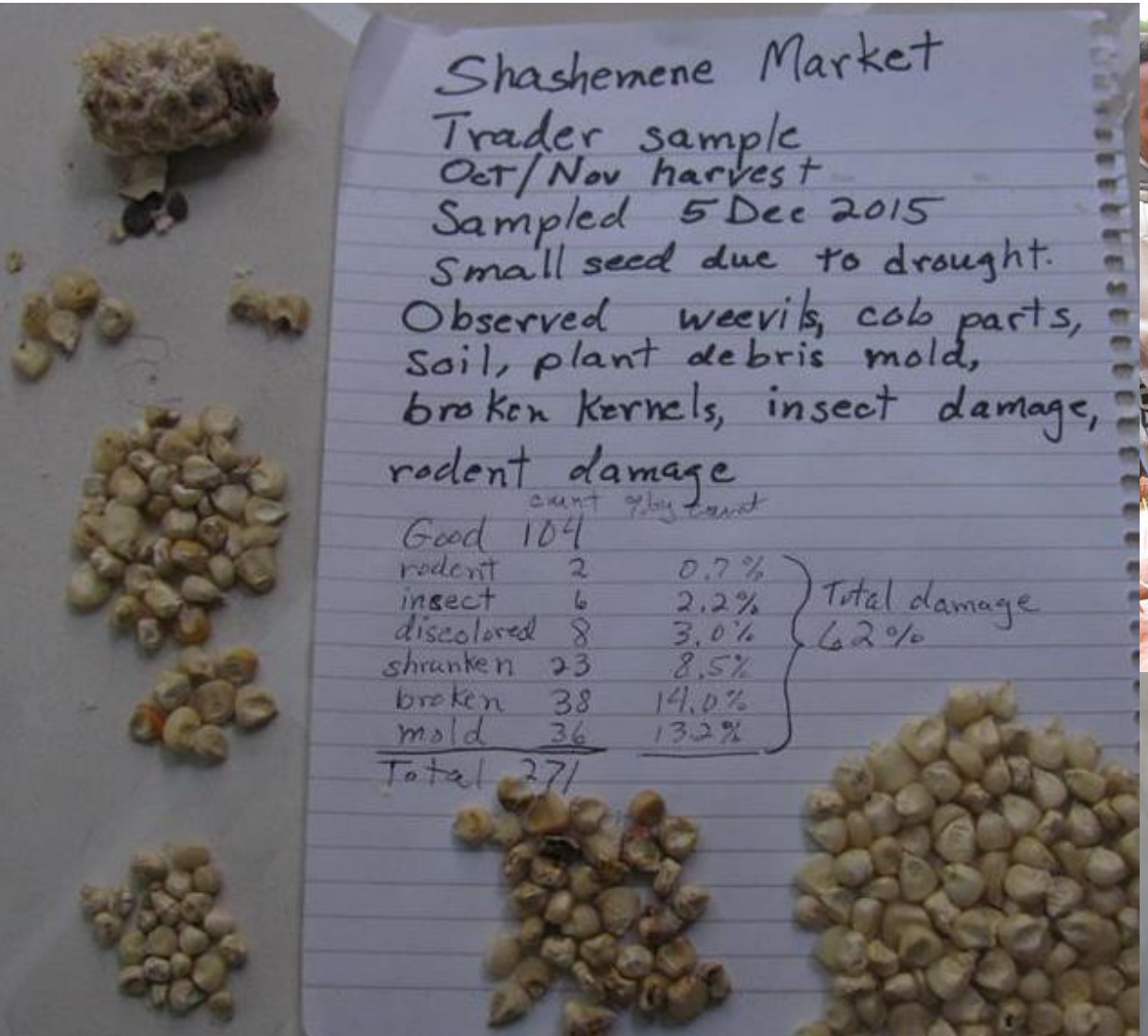

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