

Extension of Appropriate Post-Harvest Technology in Sub-Saharan Africa: A Postharvest Training and Services Center (PTSC)

Principal Investigators:

Diane M. Barrett, University of California – Davis

Lisa Kitinoja, World Food Logistics Organization

Rob Shewfelt, University of Georgia

Ngoni Nenguwo, AVRDC, Arusha, Tanzania

Radegunda Kessy, PTSC Manager, AVRDC



Project Objectives

1. Train **30** persons (researchers, extension workers, development workers) from Rwanda, Ghana, Kenya, Tanzania, Benin & Gabon as postharvest specialists via E-learning (Year 1).
2. Design & set up a Postharvest Training and Services Center (PTSC) in one target country in Sub-Saharan Africa (Year 2).
3. Provide demonstrations, training programs and conduct adaptive research on innovative small-scale appropriate postharvest handling, food safety and food processing methods at the PTSC in collaboration with Trainees and local extension personnel (Years 2 and 3).

Project Year 1 (Oct. 2010 – Sept. 2011)

- Initiated project with Co-PI in Rwanda, Kigali Institute of Science & Technology
- Applications to the Train the Trainer program (Oct. – Dec. 2010)
- Start of the ToT program (Jan. 2011)
40 trainees from 7 Sub-Saharan Africa
- 10 Assignments over year
 - Reading / Websites
 - Field Work
 - Reports
- Visited Rwanda – Feb. 2011



Project Year 2 (Oct. 2011 – Sept. 2012)

- Continuation of ToT program;
36 Master Trainers complete assignments.
- Change SSA collaboration to AVRDC in Arusha, Tanzania
- Construction of PTSC,
procurement of tools,
equipment for training and sale
- Demonstrations prepared for
ToT visits to TZ and PTSC
launch in October 2012



Project Year 3 (Oct. 2012 – Sept. 2013)

- Final in-person ToT training (Oct.) for 32 trainees (Kitinoja, Barrett, Wheeler, Crump)
- AVRDC Inauguration – Nov. 2012
- Postharvest Training – Dec. 2012 – April 2013
 - Robert Odoi* (*=Master Trainer) – Dec. 2012
 - Lisa Kitinoja & Lizanne Wheeler – Feb. 2013
 - Odette Ngulu* & Bertha Mjawa – Feb. 2013
- Postharvest Training - May – September 2013
 - Janne Remmy*, Odette Ngulu*, Bertha Mjawa, Xanfon Bitala*, Diane Barrett, Lisa Kitinoja, Lizanne Wheeler, Pat Brown, Anne Perrera
- Monitoring & Evaluation – Lisa K. - Aug. 2013



PROJECT YEAR 2

Oct. 2012 - Training & Graduation

- Master Trainers #1 - Oct. 8-12, 2012
 - 16 horticulturalists: 10 women, 6 men
- Master Trainers #2 – Oct. 15-19, 2012
 - 16 horticulturalists: 8 women, 8 men
- Postharvest handling practices, storage and processing technologies
- Farmer Training – Friday of each week
- Prior to 'graduation' ~8000 people taught PH principles by Master Trainers!

Hort CRSP Postharvest Trainers from Sub-Saharan Africa at the PTSC (Workshop #1) October 7-12, 2012



AFFO Parfait Babatoundé



Dari Linda



Noel Nekesa Makete



Pendo G. Bigambo



Tigist Tadesse Shonte



Vida Ofori



Samuel Njuguna Ndirangu



Sadoti Eustace Makwaruzi



Andrews Wiafe



Dr. Jane Ambuko



Mfashubumenyi Kizito



Merius Eleuter Nzalawahe



Francis Appiah



Christine Kasichana Masha



Esther Bernard Mwaisango



Gloria Grace Aguti

Hort CRSP Postharvest Trainers from Sub-Saharan Africa at the PTSC (Workshop #2) October 14-19, 2012



HERVE INEZA



XANFON BITALA



CHARITY GATHAMBIRI



MILDRED OSEI-KWARTENG



MUGABUSHAKA NORBERT



SAMUEL NII QUARCOO



ROBERT ODOI



KADJOGBE GUY



FRANCIS ABOAGYE NUAMAH



NANCY NJOGU



MOLLY ALLEN



ODETTE NGULU



ACHOM HARRJET OKOED



JANNE REMMY



JOAN STEVEN



WALTER K. TONUUI

Training of Master Trainers



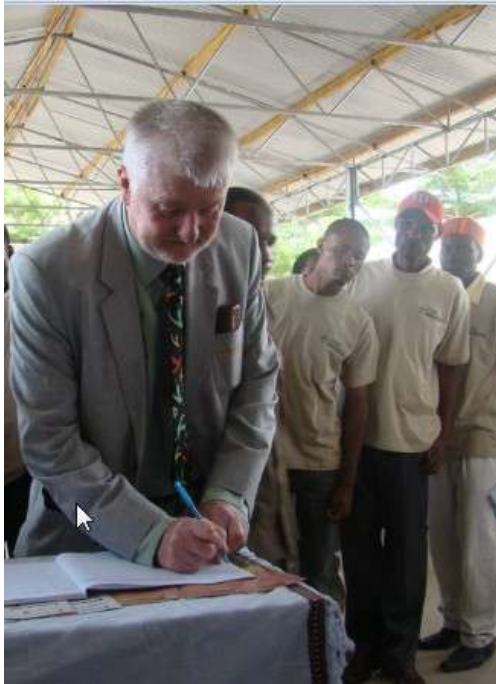
Aha! Now I understand what I have been reading about for the last year!

Farmer Training – Friday of each week

- October 12, 2012
 - 17 females, 30 males
 - From Nduruma and Bangata villages
- October 19, 2012
 - 14 females, 2 males
 - From Oltoroto village



PTSC Inauguration – Nov. 22, 2012



315 females
135 males
From 10 TZ
villages



PROJECT YEAR 3

Small-Scale Handling Practices

Robert Odoi, Master Trainer, Dec. 2012



- Topics covered
 - Assessment survey
 - On-farm and marketing chain - causes of loss
 - Commodity systems assessment
 - Demonstrations and discussion of postharvest improvements – cooling, sun-drying etc.
 - Cost/benefit analysis of improved practices
- 1 day, 17 farmers - 12 female, 5 male

Cooling & Cold Storage

Lisa Kitinoja, February 2013



- Topics covered:
 - Intro: Effects of temperature & relative humidity
 - Principles: Objectives of cooling and cold storage
 - Methods: Evaporative cooling, ZECC, forced air cooling
 - Practices: Cooling, containers, stacking, insulation, air flow
 - Cost & benefits
 - Management of equipment & structures
- 1 day, 16 men and 1 woman + 8 (7M, 1F)
Postharvest Education Foundation E-learners

Zero Energy Cool Chamber

Lizanne Wheeler February 2013



- Topics covered:
 - Needs assessment – crops, markets etc.
 - Temperature and relative humidity effects on shelf life of horticultural crops
 - Various types of shade structures at PTSC
 - Building a ZECC – requires 600 wet bricks, clean sand, level pad surface
 - Demos: storage in sun, shade and ZECC; hand-washing, cold room, harvesting etc.
- 1 day, 8 women and 6 male farmers



Making a Zero Energy Cool Chamber



Aha! Experiential learning – doing is believing

Solar Drying

Odette Ngulu, Bertha Mjawa & Radegunda Kessy February 2013



- Topics covered:
 - Intro to food processing, hygiene & safety
 - Intro to solar drying
 - Hand washing, raw material selection
 - Preparation of fruits and vegetables
 - Packaging of dried products
 - Carried out entire process, returned in 3 days
 - Entrepreneurship, record-keeping, pricing
- 3 days, 21 women and 1 man





Solar Drying Day



Aha! Success Story!

- Group of female widows trained in Feb. 2013
- Already purchased own solar dryer
- Requested a more intensive training to ensure they are well versed with solar drying technology



Future Activities



- Continue Training
 - Master Trainers, Bertha Mjawa (MAFS), Kitinoja, Barrett, Wheeler, Brown
- Research
 - Ngoni Nenguwo, PI from AVRDC, hired with assistance from TZ USAID mission (leveraging)
 - Topics: Use of packing crates, ice packs, ZECC, Coolbot, solar dryer efficiency
- Evaluation (Kitinoja) – field visits, reports
- Shop and services

Monitoring & Evaluation 2012-13

- Keeping records of people trained, visitors to the PTSC, types of goods sold, services rendered, requests for training or goods/services
- Examples:
 - Number of people trained in TZ at the PTSC (to date ~500)
 - Number of people trained by our Master Trainers in 8 SSA countries as of October 2012 (8000 +)
 - Number of those trained adopting improved postharvest practices (to be assessed via field visits, interviews, focus groups of trainees in August by LK) -- example of the widows with their own solar drier
 - Estimation of changes in income earning potential due to adoption of improved practices (comparative cost/benefit analyses)



Thanks for Your Attention!



Hort CRSP 



USAID
FROM THE AMERICAN PEOPLE

