

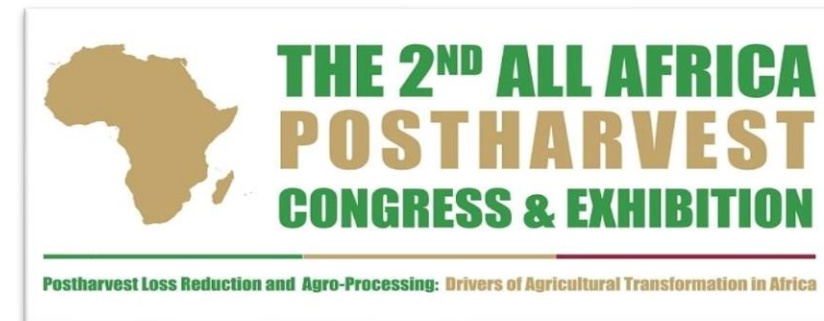
Postharvest extension and capacity building for the developing world

Vijay Yadav Tokala* and Majeed Mohammed

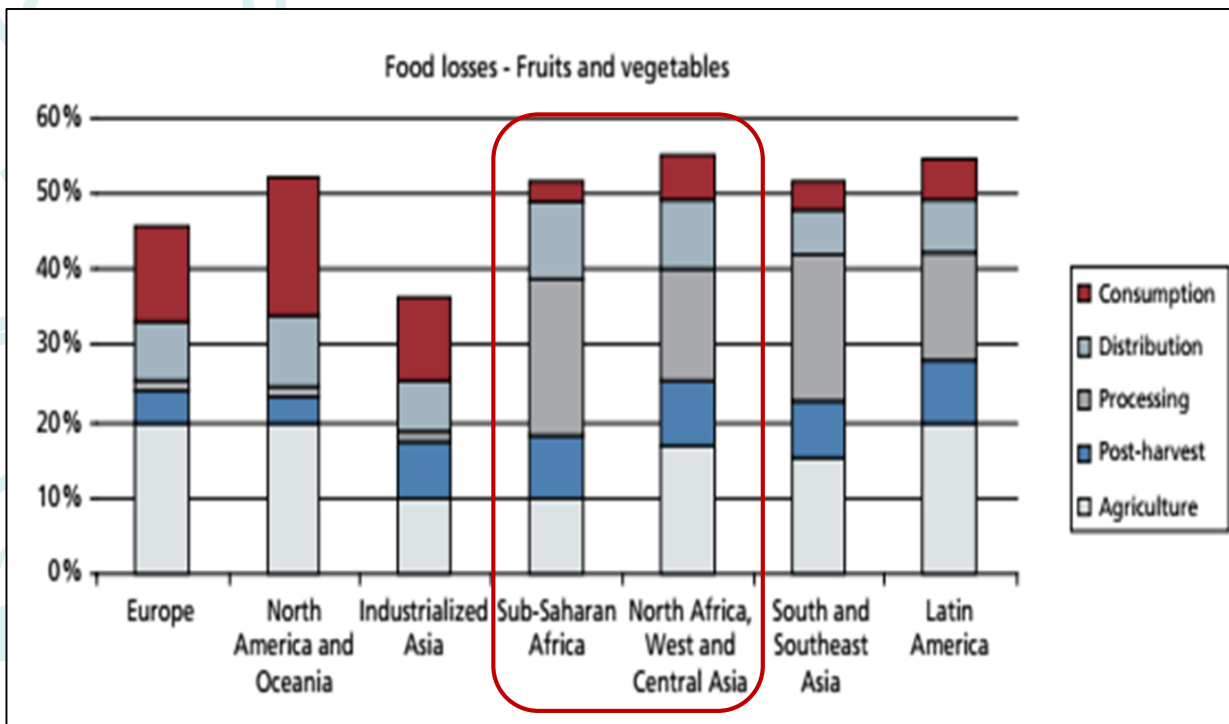
The Postharvest Education Foundation, La Pine, Oregon 97739, USA



Empowering people to reduce food losses...



Postharvest losses – Global scenario



- ❖ Postharvest food losses - negative impacts on the world economy, environment and sociological factors.
- ❖ Money and natural resources invested go waste.
- ❖ more than **815 million** – **1 in 9** on the planet is chronically hungry and malnourished.

- ❖ Reducing postharvest losses – sustainable way to ensure **global food and nutritional security**.

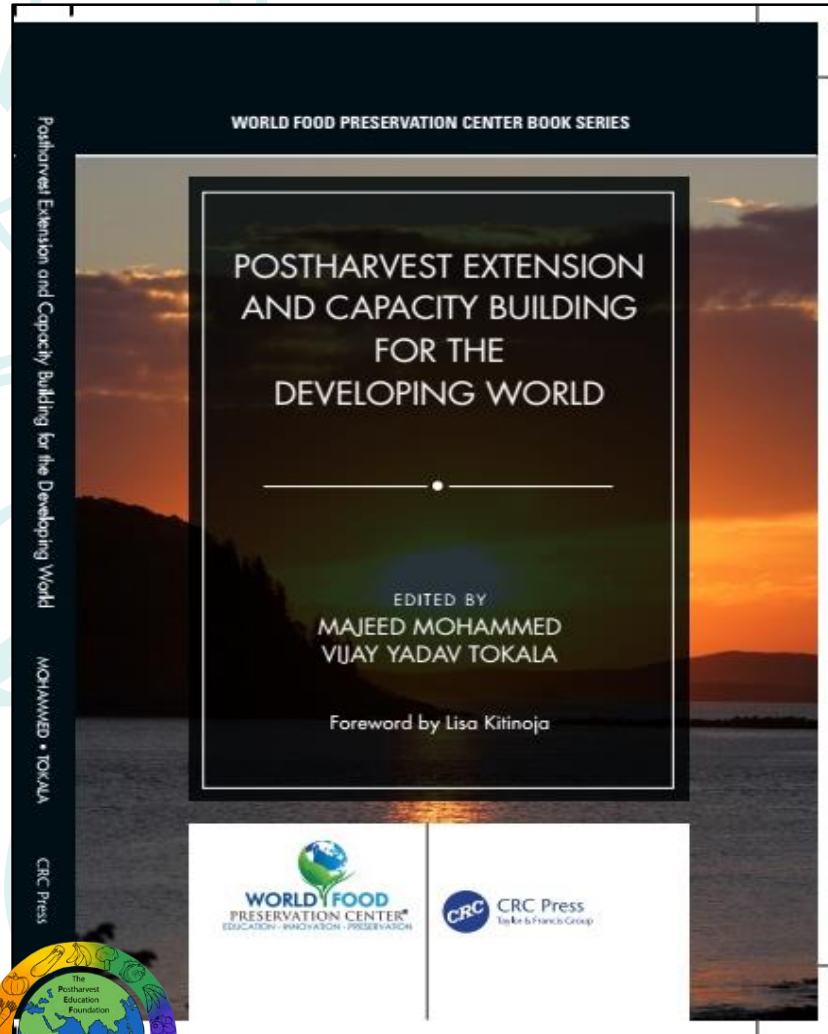


Need for Postharvest Capacity Building

- ❖ Factors responsible for postharvest losses **identified and well documented**.
- ❖ **Many indigenous as well as modern techniques** to control food losses are available.
- ❖ The proper knowledge and training in postharvest handling of crops is **critically lacking** especially in developing nations.
- ❖ **Capacity building, education and training** about factors affecting and suitable remedies to reduce food losses and wastage.
- ❖ Create **cadre of well-trained postharvest professionals**.



Postharvest Capacity Building for the Developing World



- ❖ Recent advances in **postharvest extension or outreach programs, case studies and practical methodologies.**
- ❖ Targeted to facilitate **postharvest extension professionals, trainers and outreach specialists.**
- ❖ Authors from Sub-Saharan Africa, South Asia, Central Asia, Latin America, USA, Caribbean and MENA.



Egypt - Training women on reducing postharvest losses of fresh fruits and vegetables

Author: Prof. Saneya Mohamed Ali El-Neshawy

- ❖ Traditionally women's role in agriculture have been restricted to specific activities – household farming.
- ❖ Present day women are keen in involving in innovative production and postharvest activities - processing, packing and marketing.
- ❖ Major constraints –
 - Gap between present innovation status and information known.
 - Access to training programs.



Egypt - Training of women- Approach

- ❖ **The information needs varied** with different communities.
- ❖ **Identification of needs** - Participant women were interviewed and grouped based on the skills.
- ❖ **Topics focussed** – Harvesting, grading, packaging, storage and marketing.
- ❖ **Selection of training methods** – preliminary training sessions showed that videos, PowerPoint presentations, posters, on-field demonstrations were more efficient.



Egypt - Training of women- Approach



Dr Saneya interacting with women farmers to assess information needs



On-field demonstration of mango harvest and postharvest handling by Dr Saneya



Egypt - Training of women- Case study

“ICT for women empowerment”



- ❖ Gender Research in Arab countries into information Communication technology for Empowerment-Middle East and North Africa

(GRACE-MENA)

- ❖ Train women with basic IT skills to access the agriculture information on internet.



Egypt - Training Topics

- ❖ Orchard sanitation and disease management.
- ❖ Postharvest handling and storage.
- ❖ Cold-chain management
- ❖ Biological and physical methods of controlling storage diseases.
- ❖ Food hygiene and sanitation in packhouses.
- ❖ Food contamination – pest management, mycotoxins, chemical residues.



Egypt - Training of women- Results

- ❖ Women had access to information from different sources.
- ❖ The production of high-quality produce increased and hence the net income of producers increased.
- ❖ Improvement in storage methods and reduction in postharvest losses.
- ❖ Enhanced relationship between rural farmers and cooperative association at market yards with updated market information.



Tanzania – Investing in trainings - food processing and value addition to reduce losses

Chapter Author: Ms. Bertha Mjawa

Magnitude of Postharvest Losses	
Commodity	Losses (% quantity)
Fruit and Vegetables	Up to 60 %
Cereals, legumes and nuts	30-40 %
Roots and tubers	Up to 45 %
Dairy and fisheries	Up to 80 %

- ❖ Trainings play prominent role in reducing the losses.
- ❖ **Public-Private-Producer Partnerships (4Ps).**



Tanzania – Marketing Infrastructure Value Addition and Rural Finance (MIVARF) support

- ❖ MIVARF – 7 year project – 37,500 beneficiaries – 37 districts.
- ❖ **Training** - Postharvest management and Value addition strategies.
- ❖ **Matching funds** - Food processing machinery, Postharvest training centers
- ❖ **Motto** – ‘Farming as business and not as subsistence for farming families’.



“The Grande Demam Dairy Processing Industry”

- ❖ **Dr Deo Temba**, Usa River, Arusha – veterinary doctor and dairy farmer.
- ❖ August 2012 – started processing milk to ‘**Mtindi**’
- ❖ Sales pattern of ‘Mtindi’ – **Jan 2013 – Grande Demam Project.**
- ❖ 76 farmers – 180 L (2013) > 100 farmers – 350 L > 600 L (2014).
- ❖ > 200 farmers – 800 L (2015) – Meru and Siha districts.
- ❖ 3 main pillars – **Commitment ; Improved facilities ; Effective marketing.**



Role of MIVARF

- ❖ Provided matching grants (**25%: 75% funding**)– equipment and cooling facilities.
- ❖ **Capacity building** – training industry staff, marketing skills, processing technology, conducting exhibitions, learning visits to other industries in Tanzania and East Africa..
- ❖ During late 2018 – capacity **increased to 4000 L** (from 180 L in 2013).



Outcomes

- ❖ Reduced dairy losses from **80 % to nearly 5 %**.
- ❖ Estimated **2500 farmers** – contracted beneficiaries.
- ❖ Assured access of farmers to **modern dairy extension services**.
- ❖ Veterinary medicines and supplements – **ensure cattle health**.
- ❖ **Improve economic status** of dairy farmers (~95,000 Shillings (~40 USD) /month/animal).



Tanzania – Postharvest Training and Services Center (PTSC), Arusha

Authors: Ngoni Nenguwo, Roseline Marealle & Radegunda Kessy

- ❖ PTSC – **USAID** funded project, led by UC Davis and WFLO
- ❖ Located – World Vegetable Center (WorldVeg) campus, Arusha.
- ❖ To exhibit wide range of postharvest tools and to train how to use them.
- ❖ Target audience – smallholder growers, traders and processors.
- ❖ Store room, CoolBot room, ZECC and solar drying equipment etc..



Tanzania –PTSC, Arusha

1. Training - NGOs

- ❖ NGO – Agency for Co-operation and Research in Development (ACORD).
- ❖ Geita district, NW Tanzania – **Pineapple postharvest handling.**
- ❖ **Target audience** – Technical staff, lead farmers and local agricultural extension workers.
- ❖ **Approach** – 2- day training sessions with class-room lectures and field demonstrations.



Tanzania –PTSC, Arusha

1. Training - NGOs

- ❖ **Topics** – Postharvest handling, grading, packhouse operations, value addition, cooling and storage requirements.
- ❖ **Results:** Mixed lessons were appreciated and improved understanding of participants on postharvest topics.
- ❖ **Feedback:**
 - Longer training duration and regular refresher courses requested.
 - Training requirements are different for each stakeholder.



Tanzania –PTSC, Arusha

2. Training – Farmer groups - MVIWATA

- ❖ MVIWATA – Association of Farmers Groups in Tanzania.
- ❖ **Target audience** – Vegetable growers - Morogoro and Lushoto regions
- ❖ **Topics** – Postharvest handling of vegetable crops, grading and storage.
Emphasis on low-cost evaporative cooled storage structures.
- ❖ **Approach** – Practical sessions, followed by group discussion on benefits of different postharvest practices.



Tanzania –PTSC, Arusha

2. Training – Farmer groups - MVIWATA

❖ Training outcomes:

- ZECC constructed and being used by farmers.
- Farmer to farmer promotion of postharvest techniques.
- Increased interaction between PTSC and farmers.



Tanzania –PTSC, Arusha

2. Training – Farmer groups - MVIWATA



Trainees discussing about construction and advantages of the ZECC



Tanzania –PTSC, Arusha

3. Training – Host institute- WorldVeg

- ❖ VINESA – Vegetables for Income and Nutrition in East and Southern Africa – ACIAR funded.
- ❖ **Target audiences** – WorldVeg staff, Young vegetable growers and trader group.
- ❖ **Topics** – Ways to increase market value - postharvest handling, grading packing and storage. Increasing shelf-life and reduce losses.

Approach – Six month training program.



Tanzania –PTSC, Arusha

3. Training – Host institute- WVC



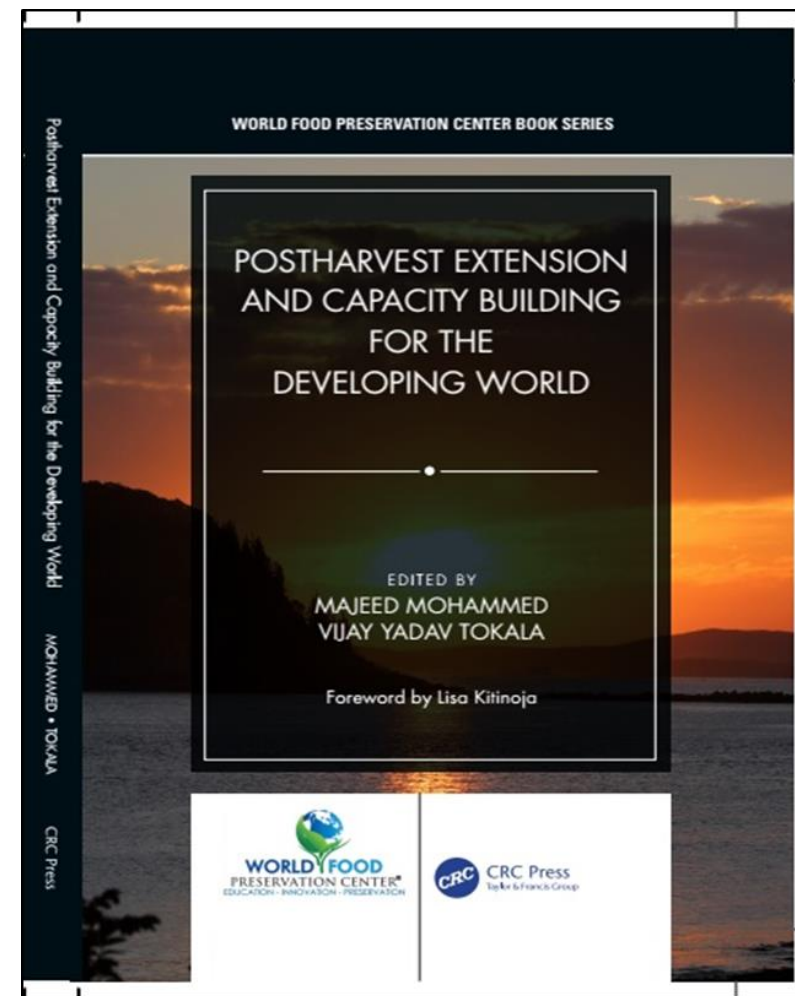
Trainees being taught about advantages of plastic crates over wooden or cardboard boxes



Postharvest Extension and Capacity Building for the Developing World

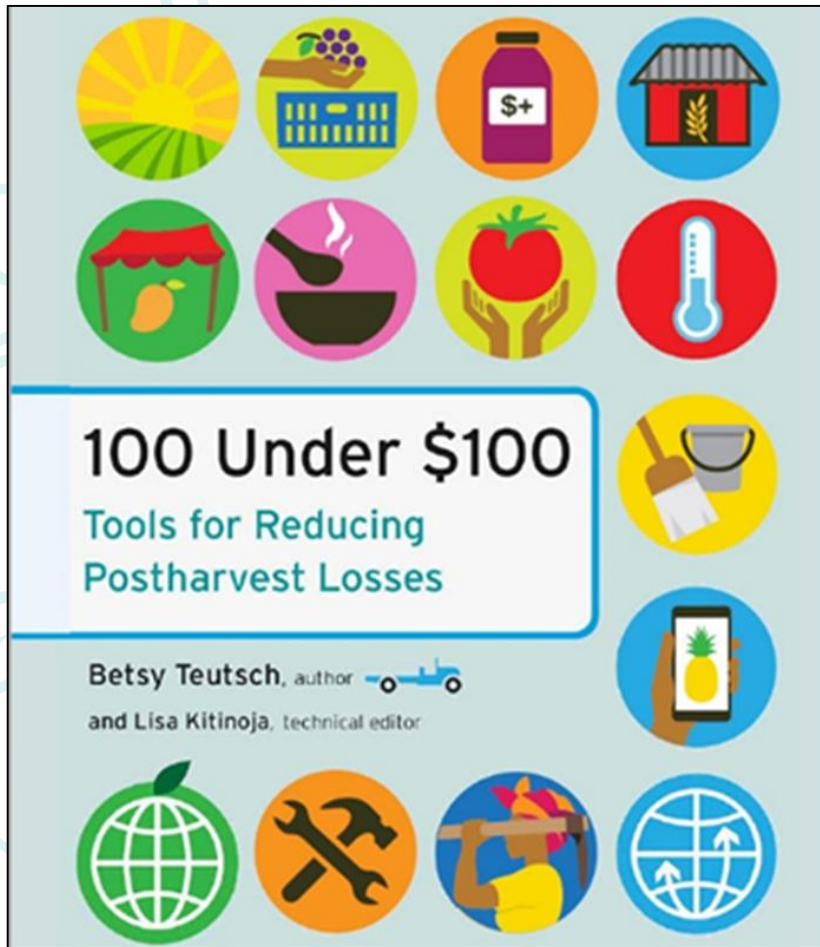
Other topics:

- ❖ **FLW Assessment methods** – current status, challenges and opportunities, CSAM.
- ❖ **Capacity building** – Extension systems, and advisory services, trainings.
- ❖ **Trainings** – ICTs, animations, e-learning programs, PTSC, monitoring and evaluations



100 Under \$100

Tools for Reducing Postharvest Losses



- ❖ 100 postharvest tools cost below 100\$.
- ❖ Case studies.
- ❖ User-friendly, interactive icons.
- ❖ Links to external materials, videos for better understanding.

FREE DOWNLOAD

www.postharvest.org





Thank You!!!

