The Postharvest Education Foundation (PEF):
Role in postharvest capacity building through innovative extension platforms and effective training programs

Empowering people to reduce food losses...

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The Postharvest Education Foundation (PEF) recognizes the realities of the current global challenge to feed a world of 10 billion people by 2050. As incomes rise, people demand more than just calories from their food as they search for a broader range of nutrients to consume.
One-third or more of all the global food produced never makes it from the farm to our fork. Measured as a country, food waste would be the third largest for greenhouse gas emissions, according to the UN Food and Agriculture Organization which revised upward its estimated carbon footprint of food waste to a staggering 3.6 gigatons of carbon dioxide.
Unfortunately, this massive amount of food never made it from the farm, spoiled in transport due to inefficient refrigeration systems, was deemed “ugly” and unsellable and therefore thrown away, or was discarded by people in homes around the world who didn’t use or want it after all.
Globally, today more than 795 million people are hungry and 160 million children under age 5 are stunted.

How did you feel?

Overcoming poverty is not a gesture of charity, it is an act of JUSTICE

Our World Is Hungry

BREAK THE CHAINS OF HUNGER
UN-SG ‘Zero Hunger Challenge’

The UN Secretary-General encourages all partners to scale up their efforts and turn the vision of an end to hunger into a reality.

What does this mean?
Causes and Prevention of Food Loss and Waste (FLW)

Main causes of PH Food Losses:
- Poor production planning
- Premature harvesting
- Poor temperature management
- Poor/lack of storage
- Poor/lack of packaging
- Poor logistics
- Lack of processing facilities
- Food becoming unsafe (e.g., Aflatoxins)

Main causes of Food Waste:
- Too strict sorting and grading standards
- Packing materials
- Confusing labels
- Serving oversized proportions

Prevention
- Organizing small farmers
- Diversifying and up-scaling production and marketing
- Investment in infrastructure
- Improvement in packaging and logistics
- Training/Extension to Develop knowledge and Build capacity of chain operators.

In general: Improving the efficiency of the food supply chains
The Postharvest Education Foundation (PEF) was founded in 2011 by Dr. Lisa Kitinoja and established with the assistance of a small group of like-minded colleagues, with an aim to provide the motivation, training and mentoring for postharvest professionals around the world. Founding members included Adel A. Kader and Diane M. Barrett, postharvest extension specialists from UC Davis.
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❖ As incomes rise, people demand more than just calories from their food as they search for a broader range of nutrients to consume.

❖ This additional demand for dietary diversity indicates that the 33% projected increase in population translates to a 60% increase in needed food supplies.

❖ Reducing food losses and waste offers an important avenue of increasing food availability without requiring additional production resources, and could contribute to rural development and poverty reduction by improving agribusiness livelihoods.
PEF’s mission is to provide innovative programs that motivate and empower people to reduce food losses and waste.

❖ At the heart of the PEF strategy is a structured e-learning program for professionals in the developing world interested in learning hands-on practices that directly address postharvest losses.

❖ E-learning is an effective way to reach practicing scientists and extension agents in distant places that may otherwise be difficult to reach.

❖ They in turn, reach local farmers, traders and marketers via their extension education and training efforts.
PEF Global Postharvest E-learning Program

✓ PEF has successfully completed six years of postharvest e-learning, with more than 160 participants from more than 30 different countries.

✓ Year-long program
✓ Mentor guided training
✓ 10 Assignments (readings, fieldwork and written reports)
✓ Graduates are “postharvest specialists”
✓ Free online e-learning manual.

✓ To make familiar with loss assessment, small-scale postharvest and processing techniques, using basic postharvest instruments, cost-benefit calculation and designing postharvest demonstrations.
What The Postharvest Education Foundation (PEF) is doing

a. Conducting a variety of postharvest e-learning programs for young professionals working with small-scale farmers.

b. Providing free access to postharvest training materials for those involved in extension work and training farmers, marketers and other produce handlers.

c. PEF supplies postharvest tools and basic equipment for use in applied research and for improving practical field operations.

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PEF offers long-term mentoring for participants in e-learning programs via social networking websites.

We provide advice and guidance for establishing local postharvest training centers.
7 OF OUR PEF GRADUATES GATHERED IN ROME (OCT 2015)
ADMI PHL CONGRESS POSTER PRESENTATIONS

Esa Abiso, Semera University
- As of 2018 more than 160 PEF e-learners graduated and are working in 30 countries around the world.

- PEF e-learning graduates in turn have trained more than 30,000 farmers and food handlers each year.
The postharvest training centers serve as a platform to establish linkages where extension workers and local postharvest trainers meet with growers and other stakeholders in the value-chains to provide training to improve local capacity and knowledge on innovative produce handling practices, small-scale food processing, storage, and marketing. PEF sponsored postharvest e-learning courses and training have shown to be effective in global capacity building and technology transfer with outreach to more than 30 developing countries.
POSTHARVEST TRAINING AND SERVICES CENTERS

The PTSC was designed to serve as an innovation platform:

• for extension workers and local postharvest trainers to meet with growers and others working along the value chains to provide training to improve local capacity and knowledge on improved produce handling, harvesting, sorting/grading, packing, cooling, storage, food safety, processing, and marketing practices
• training venue with permanent demonstrations for observing improved, cost-effective small-scale postharvest handling practices, facilities, and equipment
• where local private companies can demonstrate and explain the benefits of their goods and services related to improved postharvest handling, processing, or storage
• Include a retail shop with postharvest tools and supplies, packages, plastic crates, and other goods that can be purchased locally at reasonable prices
• where people can come to ask questions or get advice on how to use improved postharvest practices, learn about costs and benefits and marketing options
• where growers or traders can pay a small fee for services such as having their produce packed in improved containers, cooled and/or stored for a few days before marketing, leasing of a small insulated transport vehicle, using a solar dryer to produce dried fruits or vegetable snack products, etc.

(Kitinoja and Barrett in Agriculture 2015, 5, 441-455)
GLOBAL KNOWLEDGE INITIATIVE (GKI) REDUCING FOOD LOSSES IN AFRICA

- ROCKEFELLER FOUNDATION
- INCLUDES CASE STUDIES ON PICS BAGS, ZERO ENERGY COOL CHAMBER,

Case studies featured in the Resource Assessment

1. How might we scale the use of innovative storage technologies?
   - Sahelian Onion Productivity and Market Expansion Program (Agribusiness in Sustainable Natural African Plant Products, Ghana/Burkina Faso)
   - Purdue Improved Crop Storage bags (Pan-Africa)
   - Zero Energy Cool Chambers (Tanzania)

2. How might we scale the use of innovative processing / handling technologies?
   - Arabic gum coating for perishables (Centre for Excellence for Post harvest Biotechnology, University of Nottingham, Malaysia)
   - Cassava: Adding Value for Africa (Nigeria)
   - Dryers for Africa (South Africa)
   - Super Gari (OIC International, Liberia)

3. How might we assure farmers adopt a business mindset?
   - Growth and Employment in States (GEMS 4) program (Nigeria)
   - Associates for Sustainable Rural Development (Ghana)

4. How might we boost the adoption of skills and technologies featured in trainings?
   - Africa RISING (Research In Sustainable Intensification for the Next Generation, Tanzanian)
   - Mud silos extension program (OIC International, Ghana)
   - Post harvest Training and Services Center (Tanzania)
The PTSC established in Arusha, TZ was selected as one of 25 case studies to be highlighted as part of the Global Knowledge Initiative postharvest assessment project.

The PTSC Model is being adapted and adopted in many new locations -- Rwanda, Burkina Faso, Guinea in Africa, and Tuskegee, Alabama.
PEF Success Story

Noel Valentin Mulinda (Rwanda)
2012 PEF e-learning graduate:

He has opened a private “Postharvest Services” office called POLYTASK LTD. in Kigali and also began advising local retail produce vendors and traders towards reduction of postharvest losses and extend shelf life of their perishable produce. (Company website: www.polytask.net).

He has trained 60 leaders of the agricultural cooperative “IMPUYAKI COOPERATIVE”, in the Northern Province in Rwanda (representing another 880 member farmers) on loss reduction and quality improvement techniques for handling agricultural produce to better meet customer needs.
Esther Mwaisango (Tanzania) –

2012 PEF e-learning graduate:

She designed and established a new packinghouse in Lushoto, Northern Tanzania, with funding from Ministry of Agriculture and with help from her supporting team of postharvest trainers.

The packinghouse serves 3500 members of 2 local vegetable producer cooperatives. It is of a simple design based upon the manual “Small-scale Postharvest Handling Practices” and includes several movable packing lines and training programs for leader farmers and packinghouse workers. Cold storage for the vegetables is provided via a large repurposed “reefer” container with diesel powered refrigeration.
PEF Success Story

Mekbib Seife Hailegebrile (Ethiopia) – 2012 PEF e-learning graduate:

Mekbib has trained thousands since he completed his e-learning program, conducting training for development agents (DAs), Agricultural Extension Workers, health extension workers, school teachers and model farmers on home gardening, postharvest handling of fruits and vegetables and food cooking demonstration.

Dr. Olubukola Odeyemi (Nigeria)—2013 PEF e-learning graduate:

She works as a Lecturer II at the Federal University of Agriculture, Abeokuta, Nigeria, as a postharvest consultant and volunteer trainer for her local community.

She has set up demonstrations of the Zero Energy Cool Chamber and trained her students and young farmers on organic production, to use postharvest tools and postharvest handling of vegetables from production to harvesting to marketing under theWork, Earn and Learn Program.

Dr. Odeyemi has established a link with the Agricultural Media Resources and Extension Centre (AMREC) within the University through which she trains their smallholder farmers on postharvest handling of crops at different times within the year.
FUTURE TARGETS

IN THE PAST 7 YEARS PEF HAS TRAINED 140 YOUNG PEOPLE AS “POSTHARVEST SPECIALISTS” BUT GLOBALLY THOUSANDS MORE ARE NEEDED TO ADDRESS THE ISSUES OF FOOD LOSSES AND WASTE IN THEIR HOME COUNTRIES.
Future Targets

PEF is working with the “World Food Preservation Center”, “ADM Institute of Prevention of Postharvest Loss” and the “World Resources Institute” to develop books, manuals, loss assessment protocols and organise conferences.

PEF will continue to partner with organizations who are involved in reducing food loss/waste and provide advice, mentoring, tools and technical support for their extension projects and training programs.
PEF POSTHARVEST E-LEARNING PROGRAMS, TRAINING MATERIALS AND MENTORING ARE AVAILABLE TO ALL AT NO COST

PEF E-LEARNING PROGRAMS (TRAINING MANUAL DOWNLOAD):
HTTP://POSTHARVEST.ORG/POSTHARVEST_ELEARNING_PROGRAM1.ASPX

MENTORING VIA LINKEDIN
HTTP://WWW.LINKEDIN.COM/GROUPS/POSTHARVEST-TRAINING-3770124

TRAINING MATERIALS AND VIDEOS
HTTP://POSTHARVEST.ORG/PEF_WHITEPAPER_FRUIT_VEGETABLE_VIDEOS_DMB_2014%20FINAL.PDF

WWW.POSTHARVEST.ORG