

2016

USAID Horticulture Open Presentation Session
Putrajaya Marriot Hotel, Malaysia 8 September

USAID Research programs: POSTHARVEST AND HIGHLIGHTS FROM PAKISTAN





Overview

- Postharvest work of the Center
- General components of postharvest R&D
- USAID postharvest project achievements
- Targets and development partners
- USAID Pakistan – learnings
- The emerging postharvest R&D model
- Final steps for the Postharvest project



The Center's recent postharvest work

- ADB-funded work in SE Asia till 2010
- USAID Postharvest in Africa from 2012 and in Asia from 2014
- USAID AIP Pakistan postharvest since 2013
- 12 projects with some postharvest aspects



Characteristics of postharvest R&D

- Losses are localized – address individually
- Need for an ecosystem value chain approach
- No universal solutions, but a mix of old and new solutions are useful involving:
 - Research
 - Technologies
 - Empowerment



USAID postharvest project components

Value chain analysis

1. Quantify losses;
determine needs and
opportunities for
intervention



Technology generation

2. Adapt available
technologies to local
situation; develop new
technologies



Building capacities

3. Promote technological
and organizational
interventions





Global coverage

▶ Ghana ▶ Tanzania ▶ Kenya ▶ Nepal ▶ Bangladesh ▶ Cambodia





Development partners

- NARES and other national agencies (Departments of Agriculture, Women's Affairs, Agricultural Marketing, Agricultural Extension)
- Jomo Kenyatta University of Agriculture and Technology, University of Nairobi (Kenya)
- MVIWATA (Tanzania Farmers' Assoc), SEVIA project, AtoZ Textiles (private sector packager), Tanzania
- Horticulture Innovation Lab (HIL)
- HIL-Conservation Agriculture Project (Cambodia, Nepal)
- RUA/ADB SPSS Project (Cambodia)
- ADB-SCDP Project (Bangladesh)
- AVC Project (Bangladesh)
- ADB-Nepal SME Farmers Project, IDE-Nepal
- Other NGOs/private sector (Pride-Bangladesh; ADDA-Cambodia; Friends for Peace-Nepal; SIDO-Tanzania; ACORD-Tanzania; TAHA-Tanzania)



Value chain analysis

Value chain analysis

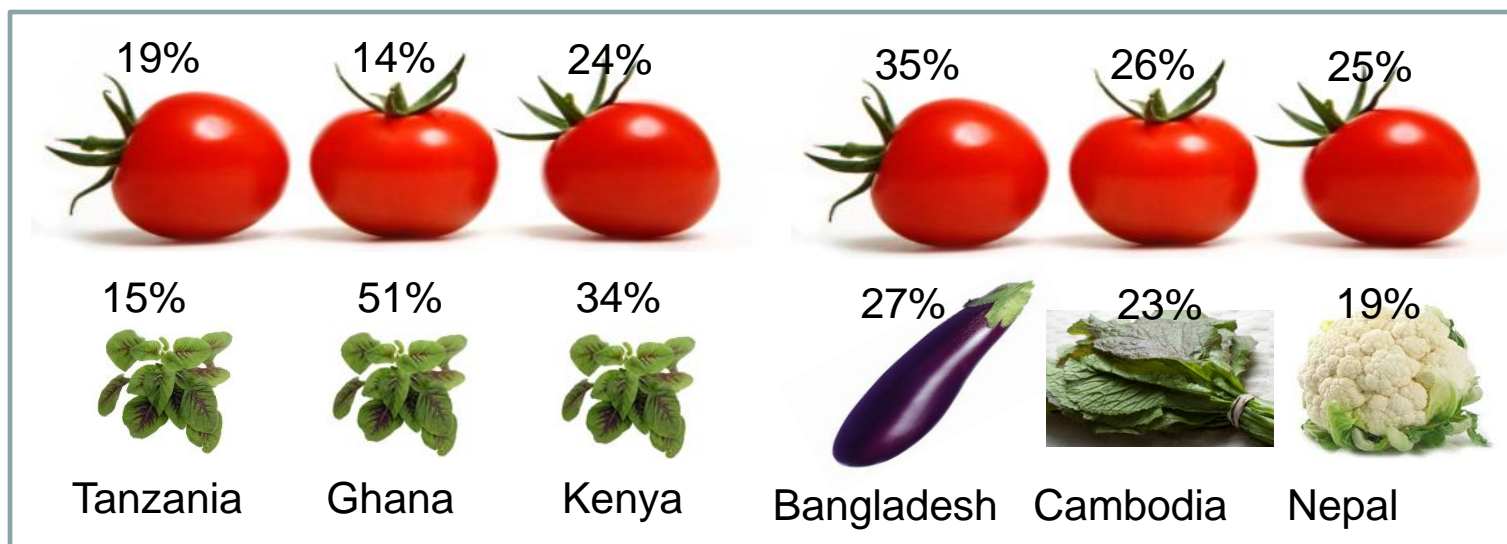


Technology generation



Building capacities

1. Quantify losses;
determine needs and
opportunities for
intervention





Technology generation

Value chain
analysis



Technology
generation



Building
capacities

- > 8 postharvest technologies developed
- >1 research technique for non-invasive quality evaluation
- >5 scientific articles published in refereed international journals and/or presented in national and international scientific conferences



Technology generation

Value chain analysis



Technology generation



Building capacities

Good transport and market handling practices

Value addition (solar dryers, fermentation, sauces)

Storage (Coolbot storage; evaporative cooler)

Packaging (MAP, best practices)

Sorting/grading and pretreatment techniques
(sanitizer/antimicrobials, precooling)

Good harvesting and field handling practices

Improved varieties (long shelf life, processing)

○ MARKET



○ PACKHOUSE

- Coordinate production & marketing
- Consolidate & process products for markets



○ FARM

- Grow crops based on market requirements & production schedule



Industrial involvement

- Calcinated calcium as non-chlorine sanitizer developed under the project is commercialized as EcoWash by Biswas Bio-Products Ltd., Bangladesh.
- 40 kg plastic crates for better transport of tomatoes planned for commercialization in Bangladesh





Building capacities

Value chain
analysis



Technology
generation



Building
capacities

- Trainings, techno demo, field days, agro/trade fairs, consultations
- Student research, including Borlaug Fellows
- Farm-packhouse-market models



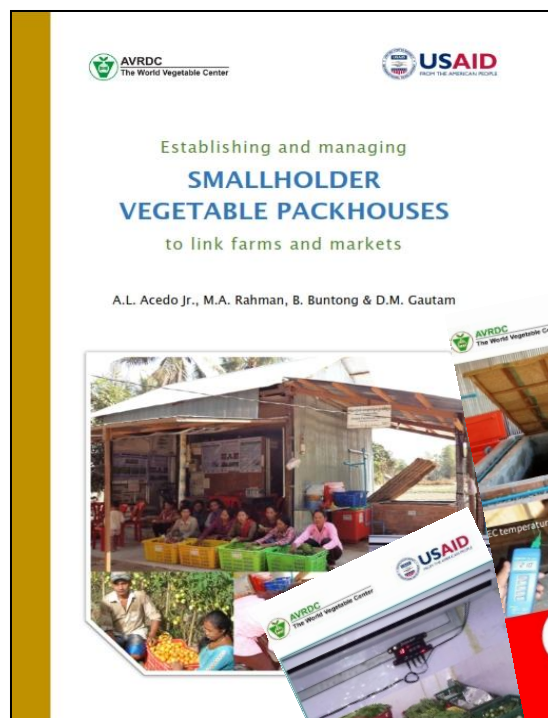
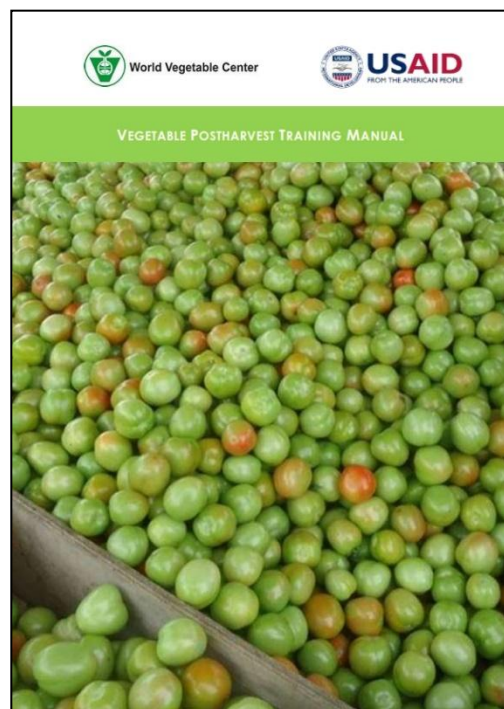


Building capacities – national targets

- Over 50 TOT trainees (> 90% lead farmers and officers of >5 farmers' associations, women's groups and CBOs and >1 business association:>30% are women).
- Over 400 technology farmer end-users trained in each target country (>30% women)
- Over 100 farmers trained using the model packhouses
- Over 200 farmers and other stakeholders exposed to improved postharvest technologies >140 hectares under improved technologies or management practices.
- Over 730 farmers, processors and other value chain actors have applied improved postharvest technologies or management practices
- One model packhouse of a progressive farmers' association in each country
- Over 1 training manual translated into a local language
- Over 5 other training materials such as technology posters, brochures and leaflets



Publications





USAID Pakistan – AIP value chains work

- Increased vegetable seed production
 - Varietal evaluation trials
 - Build capacity in seed production, processing and marketing
 - Increase seed production of improved varieties of >4 vegetables
 - Link farmer-seed producers with key private seed companies,
 - Establish seed villages in four provinces
- Evaluate vegetable value chains
 - Develop >6 postharvest and value adding technologies
 - Review and introduce new postharvest technologies
 - Build R&D capacity of partners on postharvest research
 - TOT for >200 trainers and >2,000 farmers



Increased vegetable seed production

- Improved varieties of tomato, chili and onion
- Over 14 tonnes of seed of five vegetable crops produced



- New seed villages linked to five seed companies



Evaluate vegetable value chains

- Packaging study in onion, tomato and chili
- Storage study in onion
- Trials with tunnel-type solar drier and ZECC
- Horticultural Research Unit postharvest lab
- ToT programs for 363 participants (101 women)
 - Onion and tomato harvesting, curing, sorting and storage,
 - Drying and value addition in onion, tomato and chili





Emergence of postharvest R&D model

1. How to decide on crops and key partners

- Scoping visits, RRA, stakeholder workshops, value chain questionnaire

2. Protocol for value chain assessments

- Production and marketing, postharvest loss assessment and source of losses, Identification of potential innovations (technical/institutional)

3. Adaptive research on potential innovations

- On-station and field trials, Cost: benefit analyses, Basic research where necessary, Testing indigenous technologies



Emergence of a postharvest R&D model

4. Identification of best-bet innovations

- Set criteria for selection, Business plan development
- Implement in case studies to generate evidence for impact

5. Intervention design and evaluation procedure

- Sensitization and awareness creation, Training targeting and materials, Scaling strategy

6. Communications strategy

- Policy advocacy, Learning and reflection, Documenting outputs and findings



Ecological research has keystone species





Keystone services in postharvest research?





Final work focused around packhouses

- Introduction of technologies assessed to work best in trials (eg. cooling, grading, packaging).
- Evaluate value of training with and without packhouses across countries.
- Packhouse case studies for effective integration of many practices to reduce losses and improve returns.





Thank you

