The Postharvest Education Foundation’s Role in Reducing Postharvest Losses
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Problem:

30-40% of all food produced is lost or wasted

Losses in the Supply Chain

Developed countries

Developing countries

Loss: unintended spills, spoilage, reduction in quality.
Waste: food that is of good quality but is not consumed.

Elements of a CSAM

Principal components of the Commodity Systems Assessment Methodology (CSAM) (redrawn from La Gra et al., 2016).

Return on investment: Solar dryer for maize in Bhutan

Table: ROI on a solar dryer for maize.

Factors | Current Practice | Solar dryer |
--------|-----------------|------------|
Cost of practice (Nu) | 400 | 400 |
Initial weight (kg) | 150 | 300 |
Market value (Nu) | 13500 | 27000 |
Profit (value-cost) | 13500 | 21160 |
Relative profit (Nu) | 7660 | $108 |

Typical postharvest losses of maize in Bhutan are high, e.g. in this case losses were 63%. The solar dryer reduces postharvest losses to 25%, minimizes fungal decay and protects the crop from pests (Yangden, 2016).

Approach: The Postharvest Education Foundation (PEF)

Mission: provide innovative programs that motivate and empower people to reduce food losses and waste.

Education & Training:
E-learning program which includes:
• Selecting a crop
• Conducting a CSAM (example below)
• Designing training courses
• Conducting return on investment studies (examples below)
• Designing a Training and Services Centre.

Website:
• Training material including videos
• Educational links
• White papers
• Postharvest innovation plan series

Mentoring via LinkedIn
Postharvest toolkits i.e.:
• Temperature probe
• Refractometer
• pH test strips
• Chlorine test strips
• Digital scale
• Calipers
• Fruit sizing rings
• Color charts

Return on investment: Maize crib for drying in Uganda

Table: ROI (in US$) on a maize crib.

Current Practice | New Practice |
-----------------|-------------|
Crib | 791 |
Handling (to and from store) | 41 |
Sacks (107 @ $0.38 each) | 58 |
Initial amount (kg) | 30,000 30,000 |
Losses (%) | 15 3 |
Relative costs ($) | 890 2,113 |
Amount for sale (kg) | 25,500 29,100 |
Profit (value-costs) | $4,975 $6,908 |
Relative profit (profit new-current) | $1,933 |

Current Practice:
Drying maize in the sun

New Practice:
Drying and storing maize in the crib.

Benefits:
• Excludes rodents, minimizes fungal decay, minimal discolouration, higher nutritional value, less losses and higher value (Muyomba, 2013).

Impact of the PEF:

154 graduates and 65 currently enrolled from 33 countries.

A high global impact with a limited budget resulting in graduates that train others, and training through the website and mentoring services.

Although the focus of The Postharvest Education Foundation is on fruits and vegetables, similar principles can be applied to improved handling, drying, packing, pest protection, storage and processing of grains and cereals.