



Bridging Policy and Practice

Evaluating Postharvest Loss Interventions

Lessons from PEF's Global Capacity Building Experience in Africa and Asia

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Overview

A practitioner-to-policy pathway for evaluating postharvest loss interventions - from field diagnosis to policy influence.



PEF Model

Institutional context and the E-learning through14-assignment mentored pathway



CSAM as Framework

One tool for all - diagnosis, monitoring & evaluation, and policy formulation



Evidence for Advocacy

Cost-benefit analysis and Bennett’s Hierarchy as **evidence** for decision-makers



Equity & Outcomes

Integration of **Gender Equality and Social Inclusion (GESI)**



Alignment with Global Initiatives

Connections to SDG 12.3, FAO, UNEP, Rome-based Agencies, and AU CAADP



The Postharvest Education Foundation (PEF)

The Postharvest Education Foundation (PEF) was established in 2011 with a mandate of reducing postharvest losses through hands-on capacity development.

The model includes **structured reading, field-based fieldwork, and one-on-one virtual mentoring** - producing practitioners who can diagnose loss, design interventions, and generate policy-ready evidence.



2011

Year Established



30+

Outreach Countries



5

Continents Reached



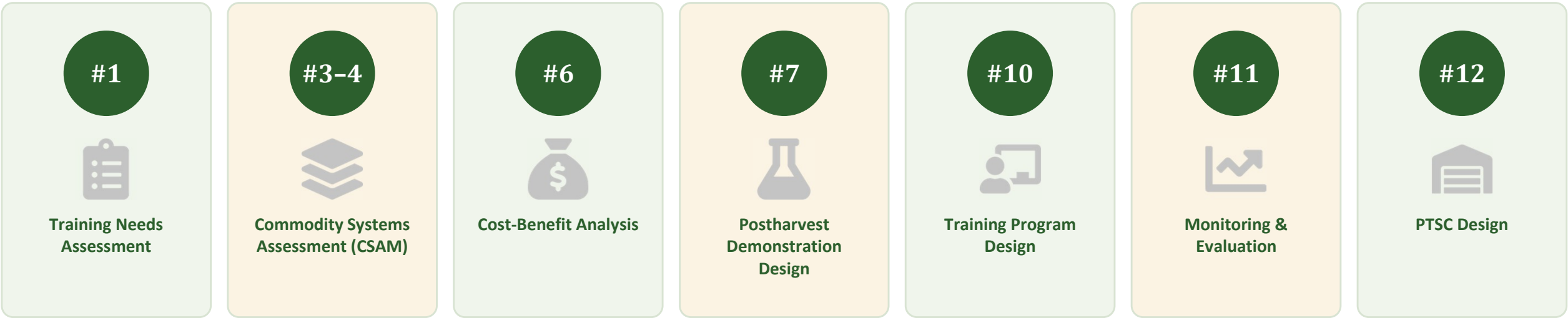
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Mentored Learning Model

Reference: PEF E-Learning Manual, 4th Edition (2025) - Lisa Kitinoja & Vijay Yadav Tokala
Website: www.postharvest.org

The PEF E-Learning Pathway - 14 Assignments

A progressive, field-tested sequence moving from diagnosis to design to evaluation.



Assignments 2, 5, 8–9, 13–14 build supporting skills - baseline reporting, extension messaging, objective-setting, proposal writing, and GESI integration - that connect each milestone above.



Emphasis throughout is on practical, field-based learning - every assignment is grounded in a real commodity system, not a hypothetical case.

Establishing the Baseline - Training Needs Assessment

A **self-administered TNA** covers 57 distinct topics grouped into 9 categories, spanning postharvest handling, marketing, and business skills. [can be modified as per specific requirements]

Participants self-rate their **knowledge, skills, experience, and interest** on a 0–3 scale before and after training.

This pre-/post-test instrument **serves as the baseline indicator for the entire M&E cycle** - the reference point every later CSAM re-assessment is measured against.



57

Topics Assessed



9

Topic Categories

Please rate yourself regarding your level of **Interest**, current level of **Knowledge**, level of related **Skills** and level of **Experience** in each of the categories or topics listed in the table below, on a scale where:

0 = None **1 = Low** **2 = Moderate** **3 = High**

For example, you might rate yourself on:

Rate yourself on your level of:	Interest	Knowledge	Skills	Experience
Teaching general postharvest technology topics	3	2	1	1

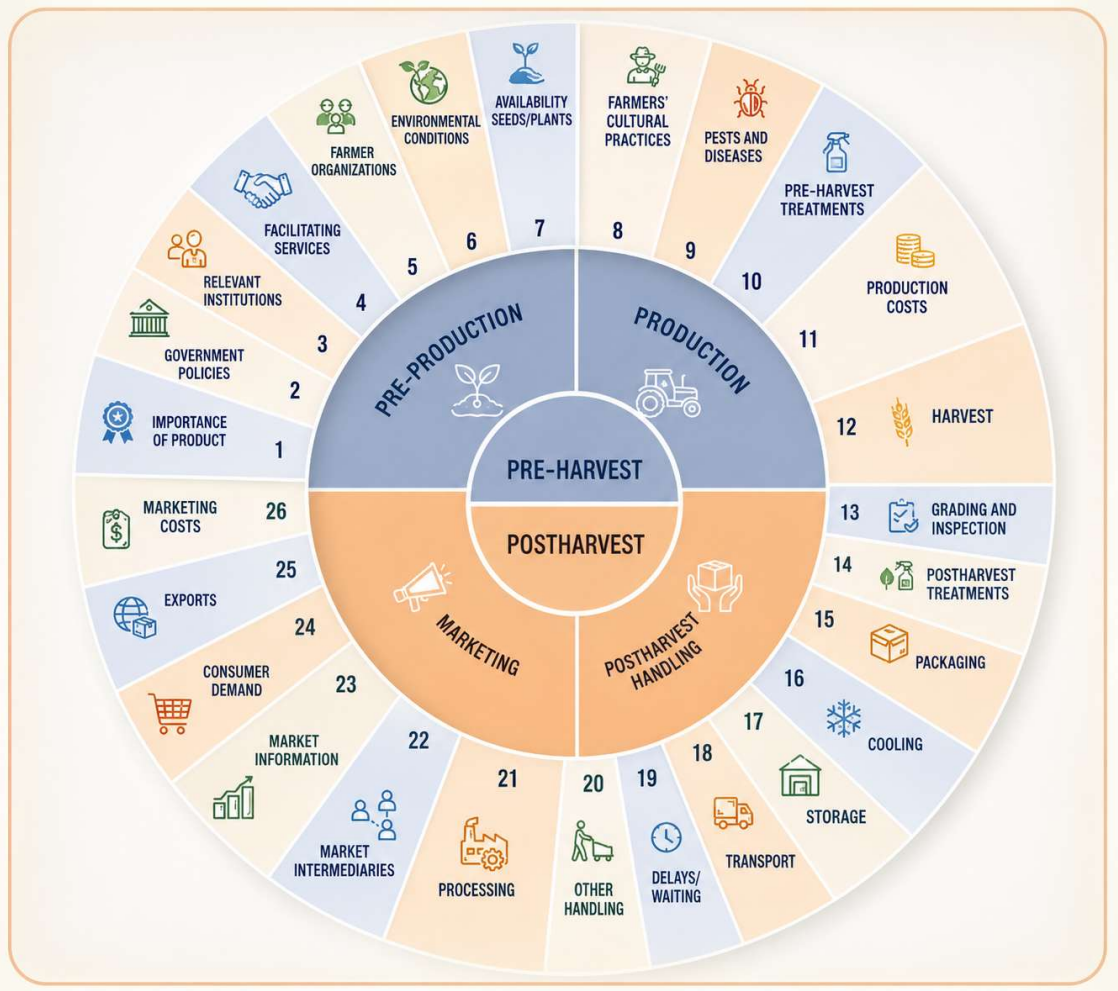
In this example, your interest level is high, and your knowledge is moderate, but you rated yourself low on skills and experience.



The Core Analytical Framework - CSAM

Commodity Systems Assessment Methodology (CSAM) adopted by PEF – serves as unified diagnostic, M&E, and policy framework - one instrument used three ways.

It examines 26 components spanning the entire commodity system:



LaGra, Kitinoja and Alpizar, 2016



Diagnostic Tool

Maps losses and root causes across all 26 components of the commodity system



M&E Framework

Re-assessing the same 26 components post-intervention to measure change



Policy Framework

Converting structural findings into targeted, evidence-based recommendations

CSAM - Classification of Findings

Every finding from the 26-component assessment is sorted into one of three categories - determining who can act on it.



Training Needs

Extension-addressable

Knowledge gaps that growers, handlers, and marketers can close through extension messaging and hands-on demonstration.

e.g., improper sorting technique, poor stacking practice



Research Needs

No existing solution

Problems with **no immediate technical fix** - referred to university or regional agricultural research centers.

e.g., a variety with no proven cold-chain protocol



Advocacy Needs

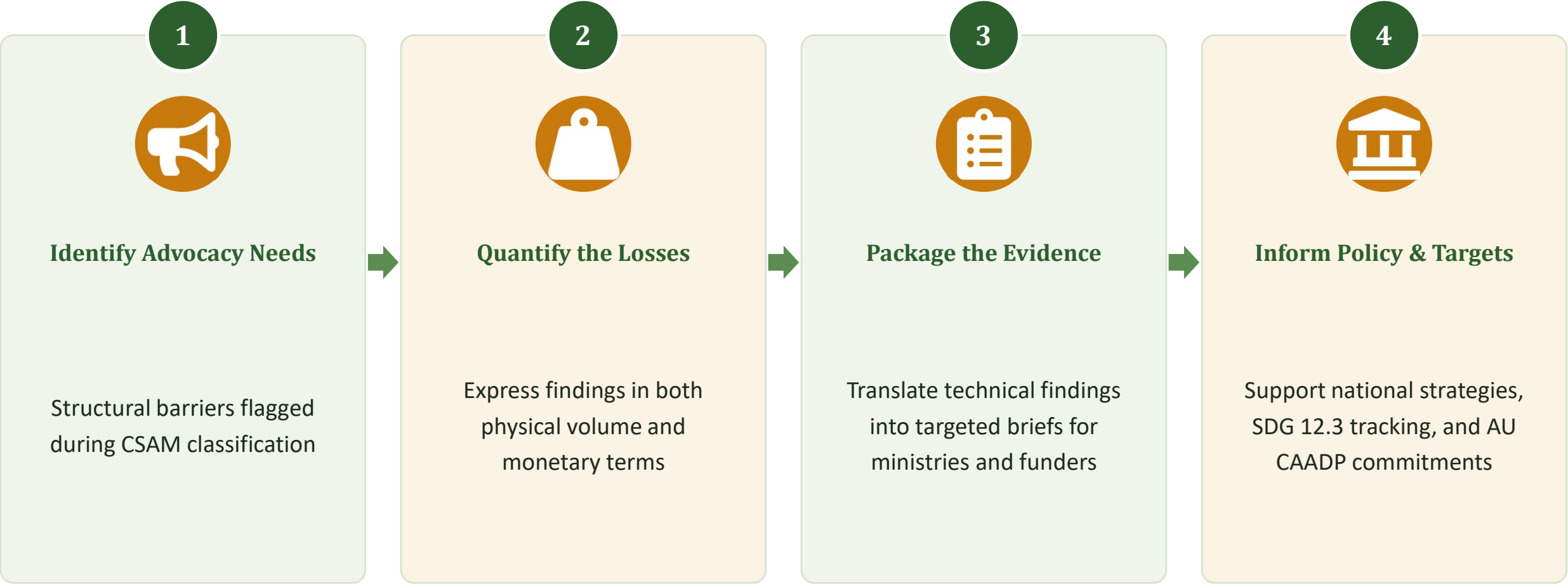
Structural barriers

Systemic constraints - infrastructure, credit, regulation - that require policy intervention to resolve.

e.g., no rural electrification for cold storage

CSAM and Policy Formulation

FROM EVIDENCE TO INFLUENCE



Cost-Benefit Analysis for Investment Decisions

Example: A standardized worksheet compares packaging or handling options per 1,000 kg of produce - the common unit for cross-technology comparison.

Metric (per 1,000 kg)	Traditional Sacks	Plastic Crates
Postharvest Loss Rate	30%	5%
Handling Method	Jute / poly sacks	Rigid plastic crates
Relative Unit Cost	Lower upfront cost	Higher upfront, reusable
Marketable Yield Retained	700 kg	950 kg



ROI Calculation

The reduced-loss value of retained produce is weighed against the incremental technology cost to compute return on investment.



Policy Implications

Strong CBA results support targeted subsidies, tax adjustments on postharvest equipment, and credit schemes for smallholders.

Gender Equality and Social Inclusion (GESI)



Disaggregated Data

Collecting and reporting all M&E data by sex and social group, not just aggregate totals.



Adapted Logistics

Adjusting timing, venue, and format so women and marginalized groups can fully participate.



Equitable Access

Actively removing barriers to entry - cost, mobility, safety - to training opportunities.



Equitable Benefit

Ensuring the gains from adoption - income, skills, status - are shared, not captured by one group.

Designing Effective Training Programs

SMART Objectives



Specific



Measurable



Achievable



Relevant



Time-bound

One-Day Training Program Design



Agenda

Sequenced sessions with realistic timing



Learning Objectives

Tied directly to identified training needs



Target Audience

Defined participant profile and group size



Resources & Budget

Materials, venue, facilitators, and costs

Assignment 9: Writing measurable objectives that anchor every later evaluation step.

PEF Manual, Chapter 11 - Training Program Design and Proposal Writing

Sample designs move participants from a single training session to full proposal-ready programs funders can act on.

Alignment with Global and Continental Frameworks



SDG Target 12.3

Halving global per-capita food waste and reducing food losses along production and supply chains by 2030.



FAO Methodologies

Global Food Loss Index (GFLI), FLAPP, and the 4S approach for standardized loss measurement.



UNEP

The Food Waste Index, tracking waste at retail and consumer levels worldwide.



Rome-Based Agencies

FAO, IFAD, and WFP mainstreaming food loss reduction across their programming.



AU CAADP & Malabo

The African Union's Comprehensive Africa Agriculture Development Programme(CAADP) Malabo Declaration commitment to halve postharvest losses.

The "Target, Measure, Act" Paradigm

CSAM-based approach operationalizes this shared global paradigm at the local level - giving national actors a practical way to set targets, measure progress with real data, and act on the resulting evidence.

The Postharvest Tool Kit

Objective, low-cost field instruments ground every CSAM assessment in measurable data - not impression.



Refractometers

Measuring sugar content (°Brix) to assess ripeness and quality



Digital Scales

Quantifying weight loss at each handling stage



Sizing Rings

Standardizing grading and size-based sorting



Color Charts

Objectively benchmarking ripeness and defect levels



These simple tools ensure empirical grounding for assessment findings - so the evidence behind every training, research, and advocacy recommendation can withstand scrutiny.

Complementarity with Existing Methodologies



Practitioner-Oriented

CSAM gives field staff a hands-on framework for capacity development, alongside macro-level indices like GFLI and the Food Waste Index.



Builds Local Ownership

National and community-level actors generate and own their own commodity-system data, rather than relying solely on external estimates.



Feeds a Shared Knowledge Base

Findings contribute to the Technical Platform on Food Loss and Waste, reinforcing - not competing with - global reporting.



CONCLUSION

Closing the Assessment-Policy Loop



Local Capacity

Building the ability of national practitioners to generate and use their own evidence



Policy Influence

Turning field-level findings into targeted, actionable policy recommendations



Global Contribution

Advancing SDG 12.3, AU CAADP, and sustainable food systems transformation

Good evaluation does not merely measure food loss - it transforms evidence into better decisions, better policies, and better livelihoods.



Thank you

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MEASURE
Collect data at
key stages



ANALYZE
Identify hotspots
and causes



MONITOR
Track conditions
and performance



EVALUATE
Assess impact
and trends



IMPROVE
Implement solutions
and reduce losses

