Postharvest Technology: Introduction to systems analysis

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One way to analyze postharvest operations is Systems Analysis.

Unloading apples in Brazil
Systems Analysis

Four steps are involved:

1. Identify the overall system
   - Beginning to end

2. Identify and 3. Analyze the individual components and inter-relationships
   - e.g., harvest, transport, pack, cool

4. Synthesize the components into a workable plan
1. Define the system (overall operation)

Overall Operation

Component 1
Component 2
Component 3

Identify the components
2. For each component, define the subcomponents

Component 1

Subcomp 1
Subcomp 2
Subcomp 3

What makes up each subcomponent?
For example, one component might be defined as:

Each subcomponent is also defined.

Ask: What, where, why, how?
In this example, there are 3 components containing several subcomponents.
Before analyzing postharvest operations (Step 3)...

- Determine requirements for the crop
  - Storage temperature and relative humidity
  - Appropriate cooling method(s)
  - Required postharvest life (to reach market)
  - Appropriate packing/shipping containers
3. Analyze the components

How are the components and subcomponents inter-related?
4. Synthesize the system

Component 1
Subcomp 1
Subcomp 2
Subcomp 3

Component 2
Subcomp 1
Subcomp 2
Subcomp 3

Component 3
Subcomp 1
Subcomp 2
Subcomp 3

What are the strengths and weaknesses of each?
What improvements could be made?
In Summary...

- Postharvest losses are significant, but they can be significantly reduced.
- Systems Analysis is a proven method that can be employed to understand complex harvest and postharvest operations.
- Once understood, an action plan can be developed to change and/or modify the current system.