

Systems approaches in Seed Trade

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ASSISTANT DIRECTOR PLANTS
FOR PLANTING POLICY

USDA-ANIMAL AND PLANT HEALTH
INSPECTION SERVICE

Traditional Approach

Systems Approach

Reactive

Proactive

Conduct end-point inspections

Audit process to ensure compliance

Produce and test

Correct unsafe practices

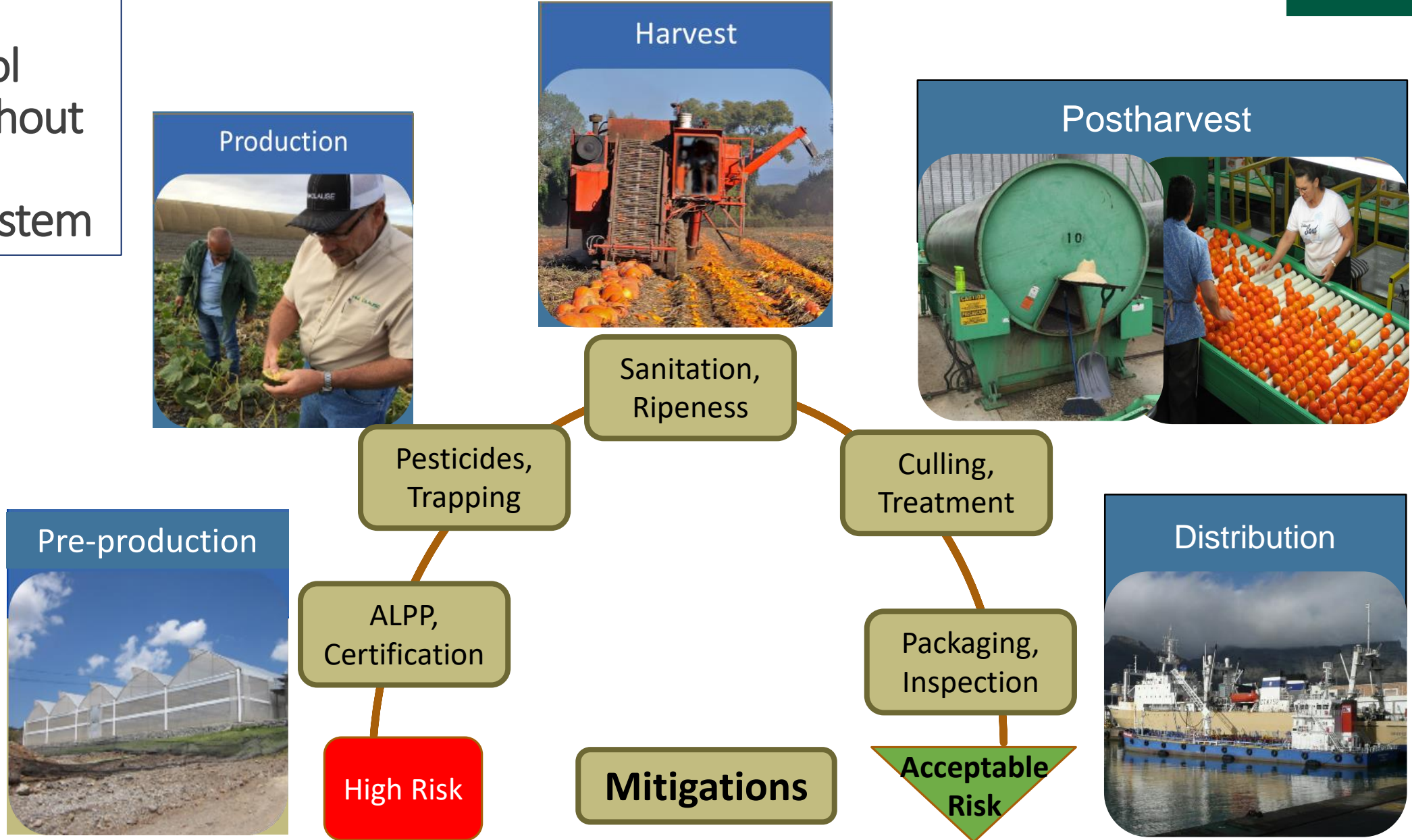
Detect contaminants

Prevent contaminants

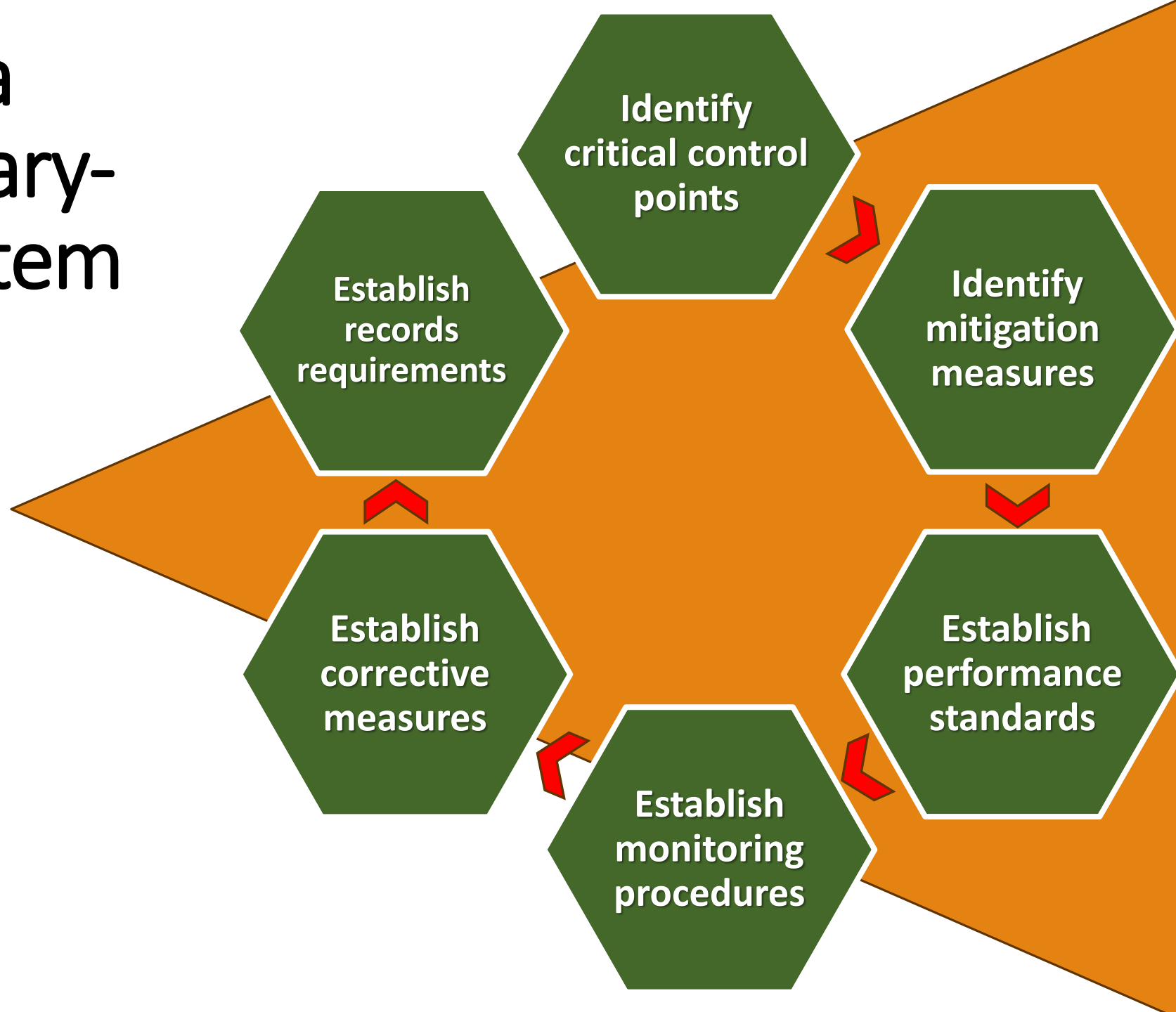
Seed Production Critical Control Points (CCP)



Cumulative Risk Reduction at Critical Control Points throughout the seed production system



Designing a Phytosanitary-HACCP System



NPPO

- Survey to establish pest free area
- Inspection to certify containment
- Producer registration
- Review/ approve system manual

- Authorize testing facilities/ certification programmes
- Certify transplant facilities

- Growing-season inspection
- Facility audits/ records review

- Field inspection at harvest
- Testing if appropriate

- Operations facility audits
- Verify efficacy of treatments

- Operations facility audits/ inspections

- Authorize/ audit testing facilities
- Approve/ validate sampling protocols
- Proficiency testing

- Import requirements
- Audit testing at import
- Post-entry quarantine
- Phytosanitary certification

CCP

Pre-planting: Site Selection & Preparation

Pre-planting: Seed & Plant Inputs

Production: Preharvest

Production: Seed Harvest

Post-harvest: Conditioning & Treatment

Post-harvest: Handling & Storage

Post-harvest: Seed Quality Testing

Distribution & Transport

Producer

- Use of pest free area, place of production, production site
- Use of buffer zones around growing sites
- Use of containment (e.g. greenhouse, screenhouse)
- Crop rotation
- Removal of potential hosts
- Use of tested/ clean water sources
- Documentation
- Produce system manual

- Use of tested/ certified seed
- Transplant sanitation
- Use of resistant or less susceptible cultivars
- Use of seed treatments
- Documentation

- Growing-season inspection
- Growing-season treatments/ pest management
- Plant sampling/ testing
- Growing-site sanitation
- Worker training
- Documentation

- Disinfection of equipment prior to use and between fields, harvest dates, etc.
- Seed is not harvested from sick, unhealthy plants
- Use of harvest windows to avoid infestation
- Sanitation
- Documentation

- Fermentation to reduce seed residues
- Seed wash to reduce microbial contaminant load
- Seed treatment (e.g. heat, hot water, pesticide) applied at receipt
- Milling and sorting to reduce fruit/plant contaminants, dead seeds, etc.
- Sanitation
- Documentation

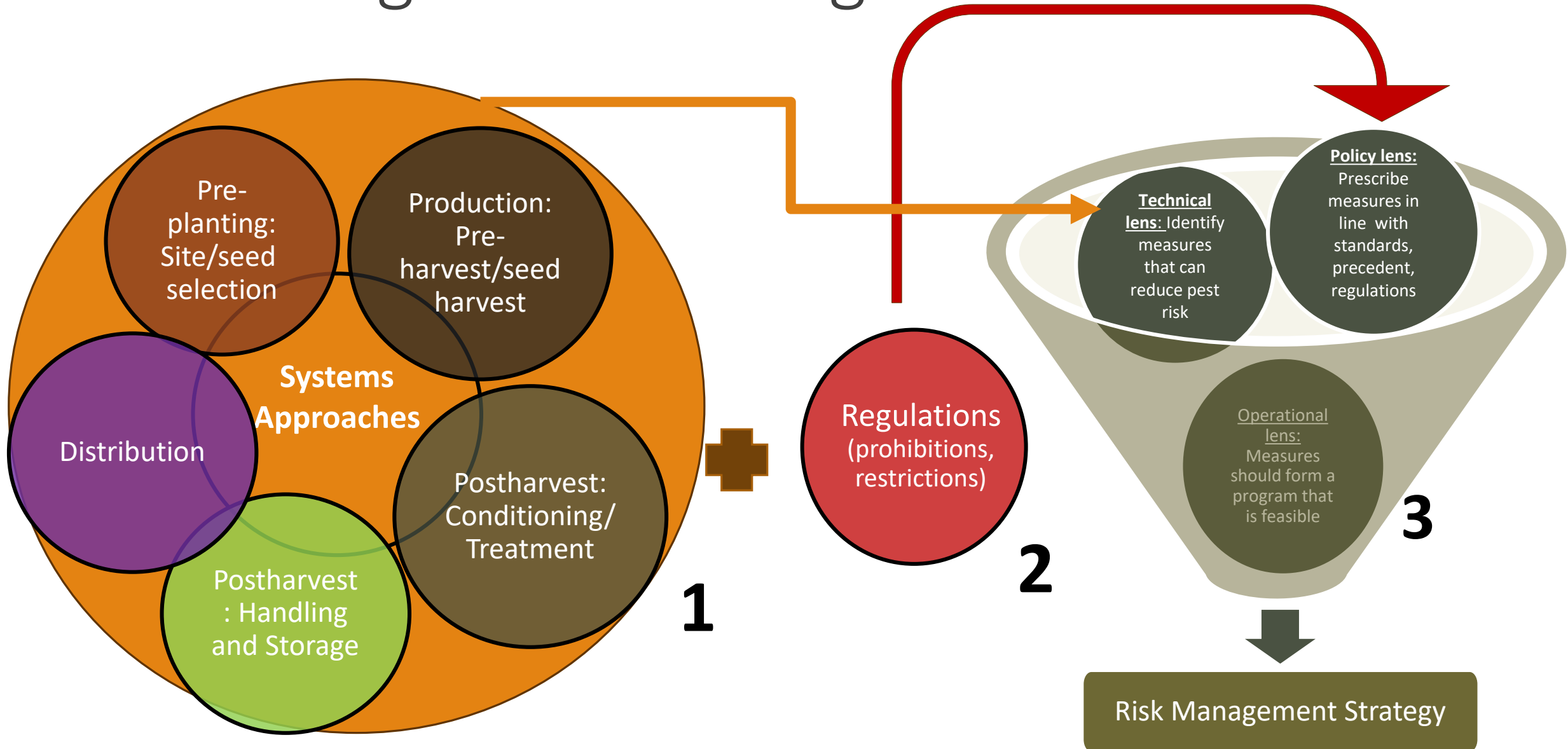
- Stored with safeguards to prevent infestation
- Stored to maintain phytosanitary status and identity
- Protocols in place to prevent seed-lot mixes (cleanout of equipment)
- Packaging sealed to exclude pests
- Sanitation
- Documentation

- Official sampling protocols (e.g. ISTA, AASCO) followed
- Authorized testing facility used
- Validated testing protocols used
- Sanitation
- Documentation

- Trace-back/ labelling
- Sanitation (e.g. conveyances free from contamination)
- Validated testing protocols used
- Documentation



Risk Management Strategies



Exporting NPPO Responsibilities

- ❑ Program administration [Review and Approve/Deny applications]
- ❑ Must maintain the program
- ❑ Must review the program's performance
- ❑ Audit
- ❑ Suspend/reinstate entity based on non-compliance

Importing NPPO responsibilities

- Define Import Requirements
- Review the program of the exporting country
- May conduct monitoring of imported seeds
 - Port-of-entry
 - Preclearance
- Notification of non-compliance

Participating company responsibilities

- ❖ Seed Health Management Plan
- ❖ Staff and Facilities Information
- ❖ Identification and Tracking
- ❖ Internal Audits
- ❖ Records
- ❖ Change Management
- ❖ Reporting
- ❖ Corrective measures
- ❖ Quality management system

ADVANTAGES

Encourage collaboration between national plant protection organizations (NPPOs) and industry

Adds possibilities & flexibilities for trade that single point mitigations cannot

Pro-actively addresses issues and aims to avoid ad hoc solutions

Global harmonization, leading more predictable trade

Can provide an effective approach to the uncertainty that is identified in a risk assessment or efficacy of risk management measures

An alternative to single and other less practical measures

Allow risk managers to formally include practices and conditions that are not traditionally prescribed as measures

Systems Approaches

CHALLENGES

More complex than end-point inspection

Can add additional costs/resources (audit, personnel, training...)

Global harmonization can be challenging: it requires bilateral negotiations & agreements, constrain NPPO resources

Maintaining the system and approvals including audits and quality management system requires long-term commitment

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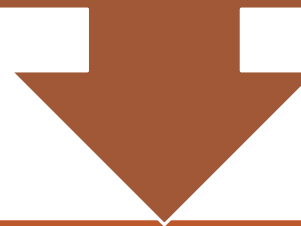
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ReFreSH Concept

Systems approach that leverages industry best practices

Accreditation alternative to consignment inspection



Participating companies develop

Quality Management
System

Seed Health
Management Plan

Operational vision

- Entity applies to participate in ReFreSH and is registered if approved

- Regular audits of ReFreSH entities
 - Internal audits
 - Audits by NPPO

- Port-of-entry inspection of documents and ReFreSH certification; seed released to entity

- Random testing of seed at ports of entry to verify compliance

ReFreSH Resources

Version 2 published Sept 2023



ReFreSH Concept Paper



ReFreSH Accreditation Standard



ReFreSH Participant Manual



ReFreSH Management Plan
Template



Dedicated ReFreSH website:

<https://www.aphis.usda.gov/aphis/ourfocus/planthealth/refresh>

How It Could Work



U.S. ISSUES EXPORT PC BASED ON PRODUCER ACCREDITATION Under ReFreSH



MX ACCEPTS EXPORT PC BASED ON ACCREDITATION IN LIEU OF CONSIGMENT INSPECTION



MX ISSUES AND AU ACCEPTS RE-EXPORT PC BASED ON ACCREDITATION