

# Linking Sri Lankan farmers to the high-end global markets

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## ICT-based traceability opportunities

Workshop on the Potential for ICTs in the  
Agriculture Value Chain

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# Plan

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- ❑ Traceability as a competitive tool
- ❑ The local traceability story
- ❑ The agriculture environment in LK
- ❑ ICT interventions to create opportunities for farmers to benefit from traceability
- ❑ Issues



# Traceability to the core

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- Sanitary and phytosanitary standards becoming increasingly important in international agricultural trade due to growing food safety concerns
  - Produce [organic] and facilities certified
    - GLOBALGAP [formerly EurepGap] etc.
    - ISO, HACCP etc
- Soon, no traceability → No export



# I want to know where my banana came from. Now.

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- 776: Don Pedro Farm
  - “In the heart of La Guajira desert with a great view of the snow peaks of the Sierra Nevada de Santa Marta, Dole Colombia, operates a farm called Don Pedro”

# I want to see the scramble

- "Your egg came from farm in Northallerton"

My Fresh egg

ABOUT | EGG SAFETY | FRESHNESS & TRACEABILITY CODING | NUTRITION | EGG FAQs | FRESH NEWS | TELL A FRIEND | CONTACT

> TRACE YOUR EGG

Please enter your tamperproof Freshness & Traceability Code in the box below.

A005 EXP 05 21

Key Egg Dates	
Processed Date	Apr 6, 2008
EXP Date	May 21, 2008

Your Egg Information	
Egg Brand	EggFusion's Best
Plant	EggFusion (example)
Plant Location	Boulder, CO
Plant Code	P1234
Retailer or Distributor	Example Customer
Traceability Code	A005 EXP 05 21

**Not sure how to enter your code?**

Locate the Freshness & Traceability Code on your egg. Enter all the code information you see on your egg in the box above as it is shown. It's that easy.

Type your code as:  
A005 EXP 05 21

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# EU Standards

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## □ EU

- “Under, the new GSP+ of the EU, Sanitary and Phytosanitary (SPS) standards contained in the Food and Feed regulations mean that many developing countries will lack the infrastructure necessary to upgrade their products in order to enter the European agricultural market.”



What about us? Can we meet these conditions?

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# Ma's Tropical Food Company

Leading spice and spice-based product company. Both local and export; Nestle, Cargills, SriLankan etc.

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- A case study by IPS
  - “The raw materials used in production are fully traceable throughout the whole production process”
  - Well documented and computerized documentation procedure facilitated by Goods Receiving Notes; Stock Cards, Job Cards and Batch Numbers etc.
    - Supplier details
    - Quantity
    - Quality
- [Entry in to the global marketplace](#)





# HJS Condiments Limited

22% of fruit and vegetable exports. 2nd largest Gherkin exporter in Asia; McDonald's Burger King etc.

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## McDonalds and HJS

- Need to provide a full traceability report within 45 minutes of receiving a query
  - Successfully meet requirement through well organized and documented paper+IT based process
  - 8,000 out-growers; 350 persons involved in quality control process including traceability
- [Meet stringent food safety standards](#)



# Benefits

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- Full tracking and traceability provides competitive advantage
  - Ma's, HJS, Dole, Chippindale Eggs
- Customers willing to pay more. But, does it translate in to
  - Increased income to exporters
  - Increased income for farmers
  - Shifting of resources to more profitable value-added agri-businesses



Do benefits go down to the farmer?

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# Farmers benefit; Ma's

IPS study

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- 23,000 potential farmers
  - Poor subsistence-level farmers with no assets but for the small plots of land
- Ma's Farmers [inclusion]; 300 supplier base; 39 organic certified; 30 awaiting [60+ now]
  - Premium for produce meeting standards
  - Stable price
  - Technical knowledge → improved productivity
    - Reduce pre-mature harvesting
  - 'Eliminate middlemen' → higher 'profits'
  - [Better] record keeping



# Farmers benefit; HJS

Discussions with staff

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- 8,000 out-grower farmers are linked
- All of what was discussed +
  - Some feedback on quality
  - Reduced waste



# Is there a net benefit?

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- Cost of traceability
  - Public good?
    - Avoid catastrophic national implications of not meeting safety standards?
  - Pure private good?
  - Public-private-partnerships
    - Egg advertising?



# Missed opportunities

IPS study on Ma's and discussions with farmers

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- Inability to include more farmers and/or sustain them in out-grower schemes
  - Exogenous; cannot change
    - Transport, land and fertilizer policy etc.
  - Endogenous; within own control
    - Incentive structure in place?
      - Are there mechanisms to ensure quality improvements due to traceability are properly rewarded?
- Many farmers outside the out-grower schemes



# A quick LK agriculture profile

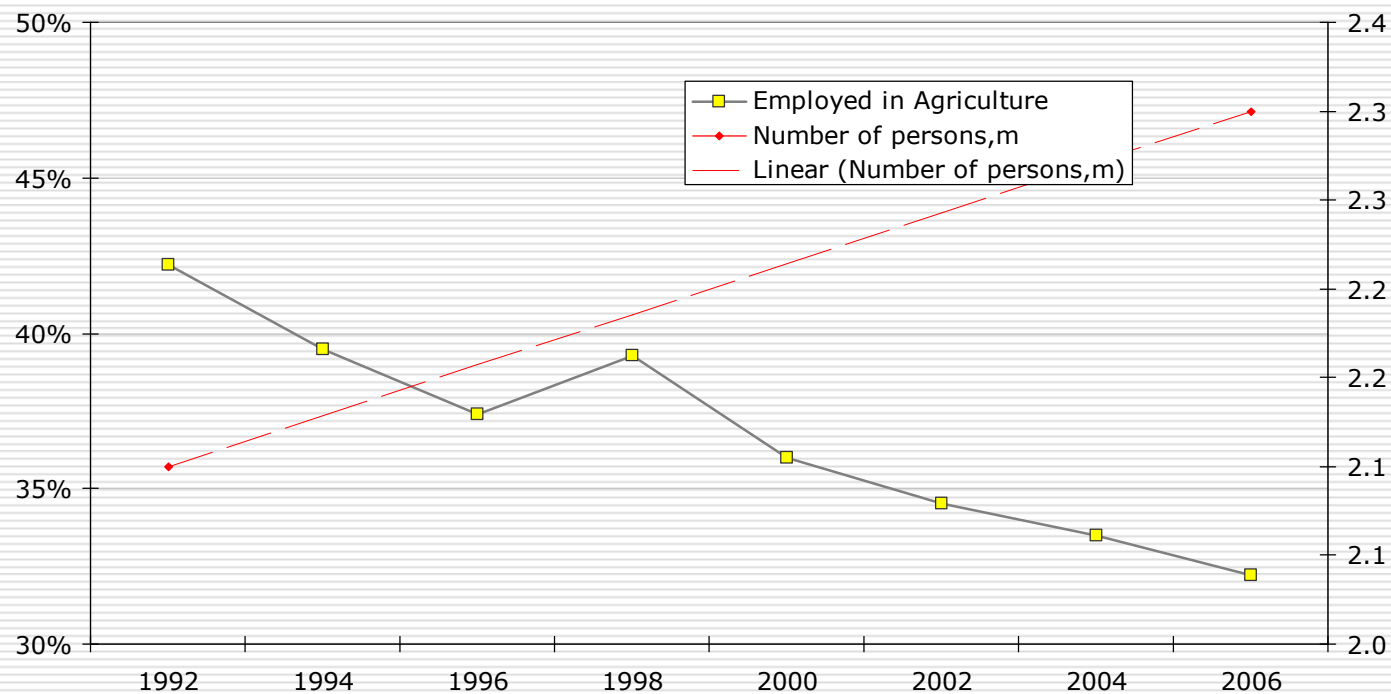
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# Less and less farmers; or is it?

## □ All farmers

- Percentage declined, but numbers [m] increased



Source: DCS; Quarterly Labour Force Statistics

# On the whole...

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- Importance is dropping
  - Share of Agriculture in GDP 13.4%
  - Contribution to GDP growth is low; 2006 1.0% [Telecom 20.1%]
- Paddy dominates non-plantation sector
  - Close to 50% of total area under agriculture
  - Half of all agricultural labour
- Other export crops are gaining importance
  - Closing up on 5% of agricultural land; 90,000 ha.



## Other? Export agriculture crops

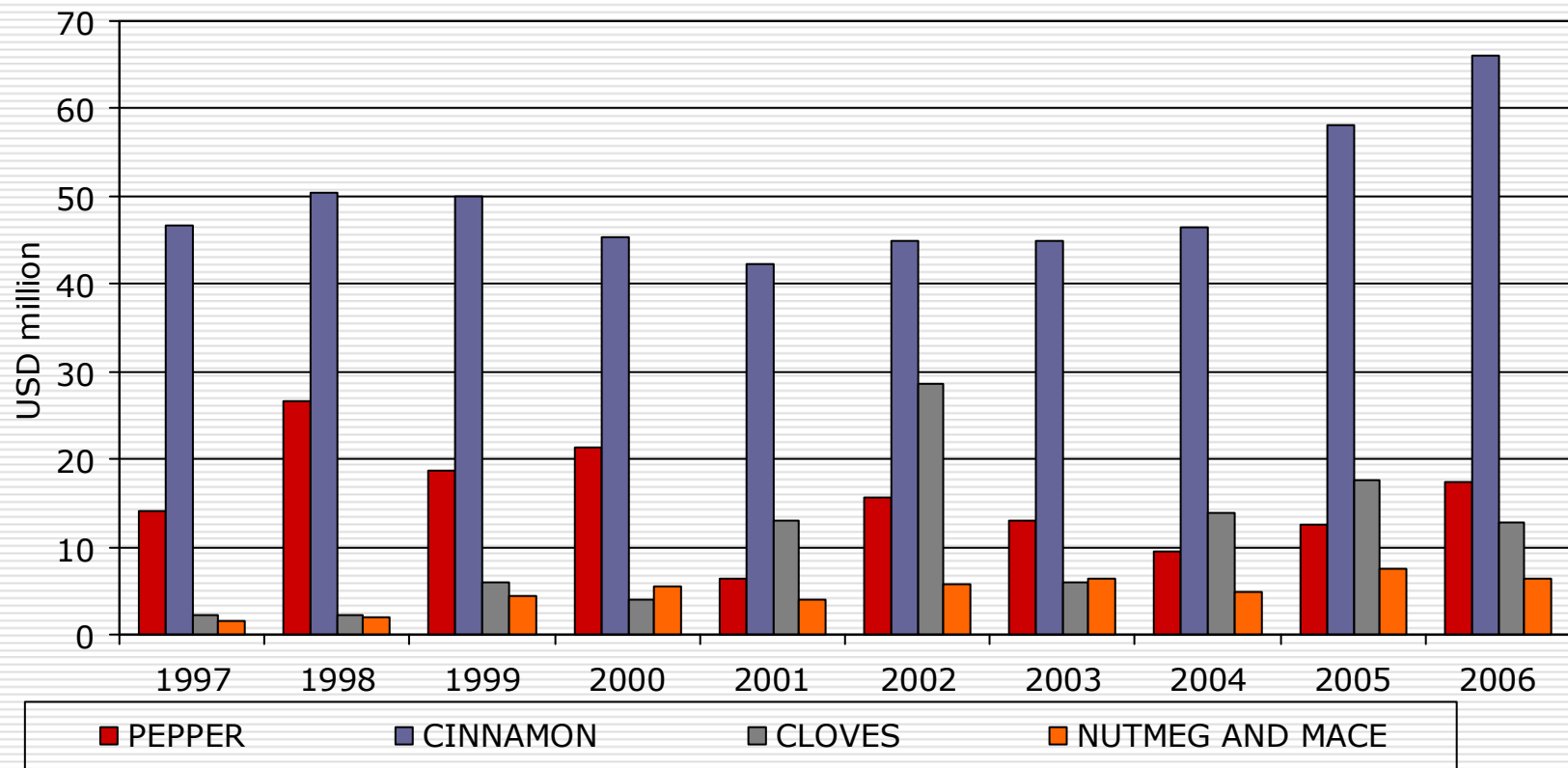
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- Untapped potential; only 2.8% of total exports
  - 2006 export value; USD 190m
    - Spices; USD 85m
      - Cinnamon; USD 66m
      - Un-manufactured tobacco; USD 35m
      - Pepper; USD 17.42m
      - Cloves; USD 12.69m
    - Cut flowers and foliage; USD 12m
    - Vegetables; USD 10m
    - Fruit; USD 10m



# Spice exports have grown, marginally

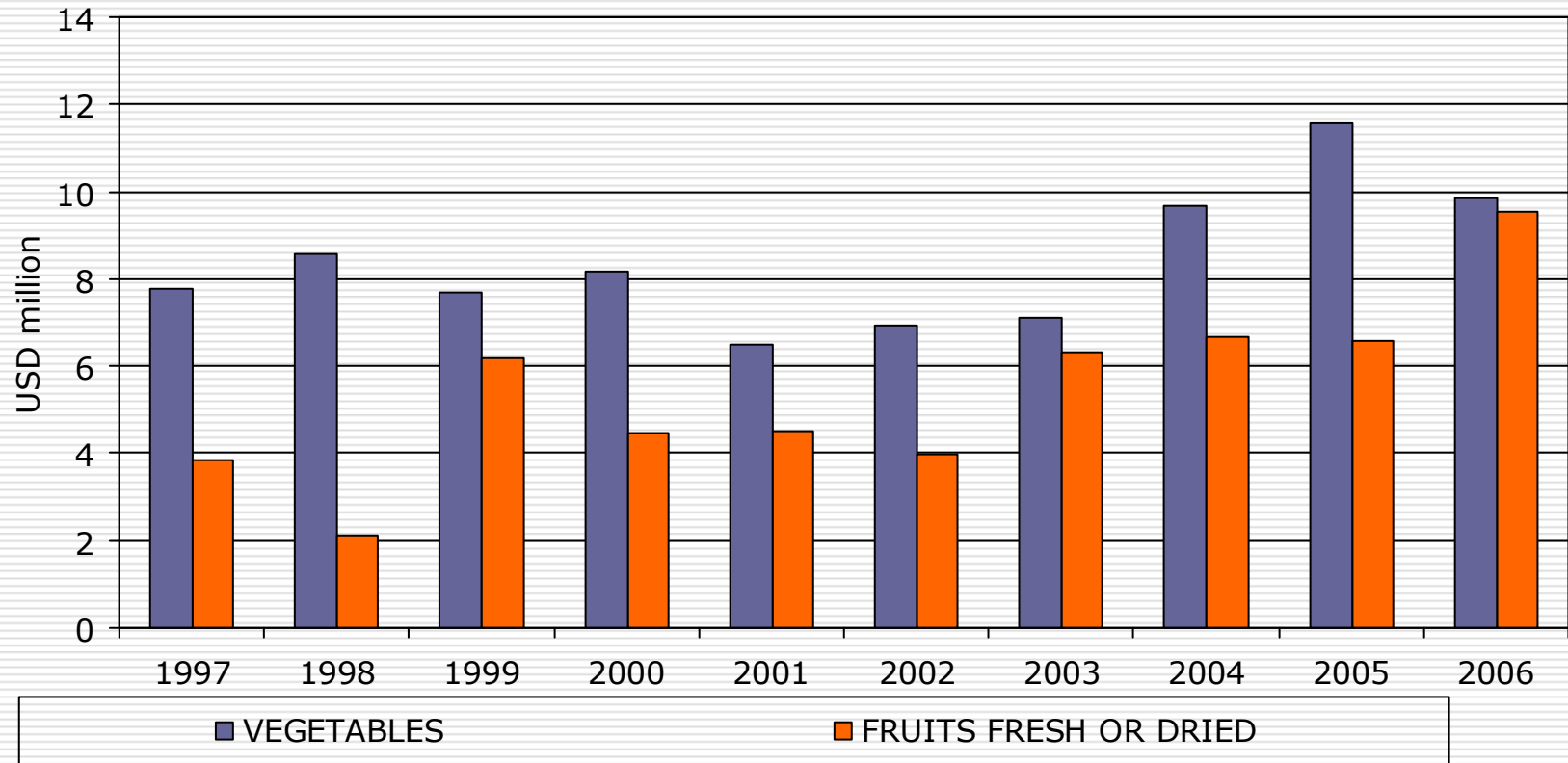
Export of Spices; Value in USD m; Source EDB



Source: EDB

# Story not very different for vegetables and fruits either

Export of Vegetables; Value in USD m; Source EDB

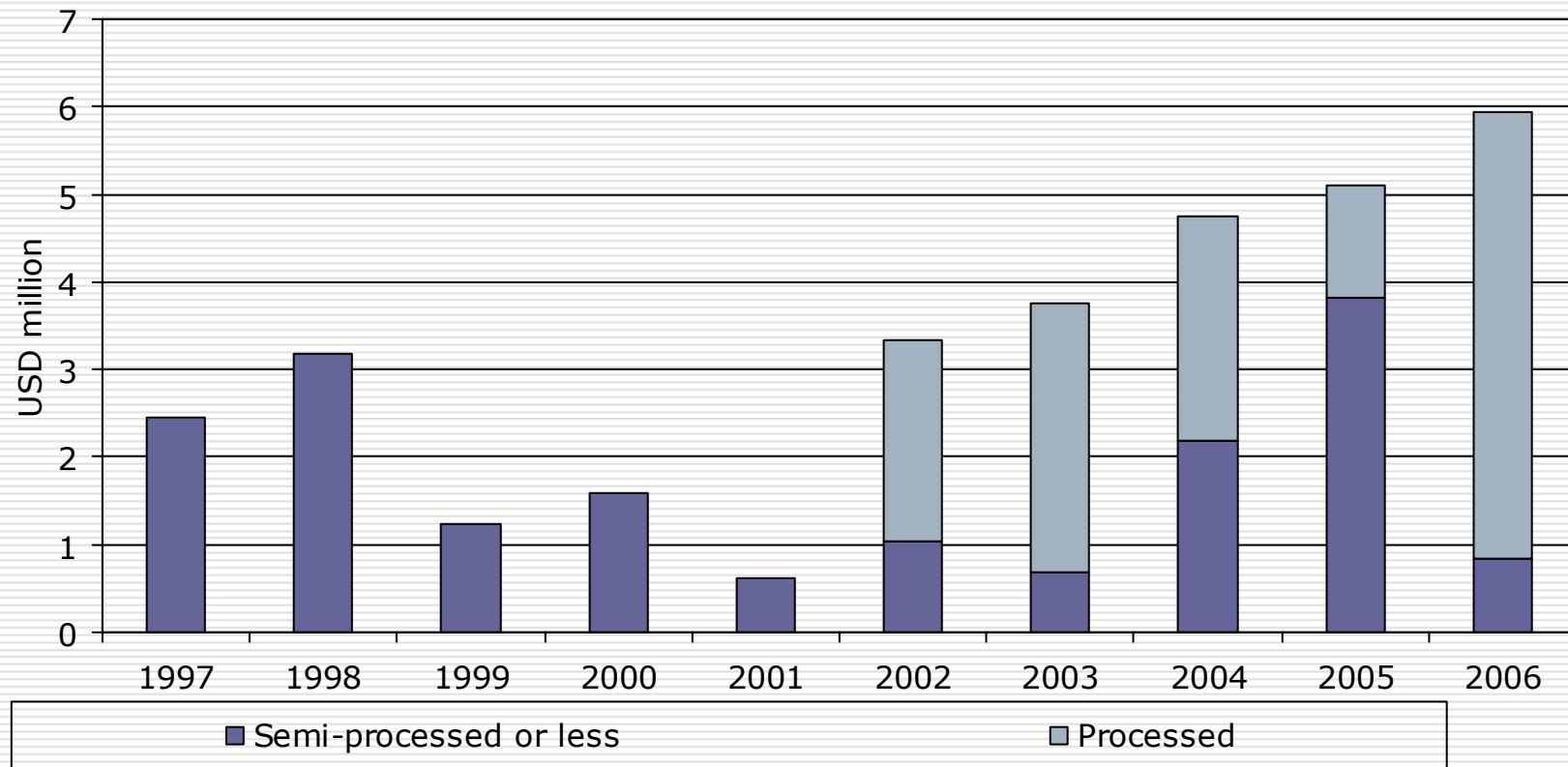


Source: EDB

# Gherkins have done a little better

Including processed gherkins

Export of Gherkins; Value in USD m; Source EDB



Source: EDB

# Vision for Agriculture

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- The 10 year policy framework
  - To transform subsistence agriculture to a commercially oriented and highly productive sector
- Other export agriculture
  - Fruits and vegetables
    - Improve competitiveness
      - Recognize international food safety standards → Traceability, certification and testing
    - Increase exports by five-fold
      - Expand existing markets; new markets
      - Encourage cold chains; reduce post-harvest loss



# But, what are the issues

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## □ Theory

- Economies of scale in traceability, certification and testing → competitive advantage to larger production units

## □ Practice

- Due to land policy and other agriculture policies small holders are the dominant suppliers for export firms
  - Small land holding; so out-grower schemes; Ma's, HJS etc.





# Improving competitiveness through traceability

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ICT for Agriculture

# Quick traceability recap

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- ❑ Exporters benefit
- ❑ Farmers **also** benefit to an extent
  - Better prices for better quality [meeting standard]
  - But unable to create the quality-traceability-price link to build incentive structure
- ❑ Cost of traceability



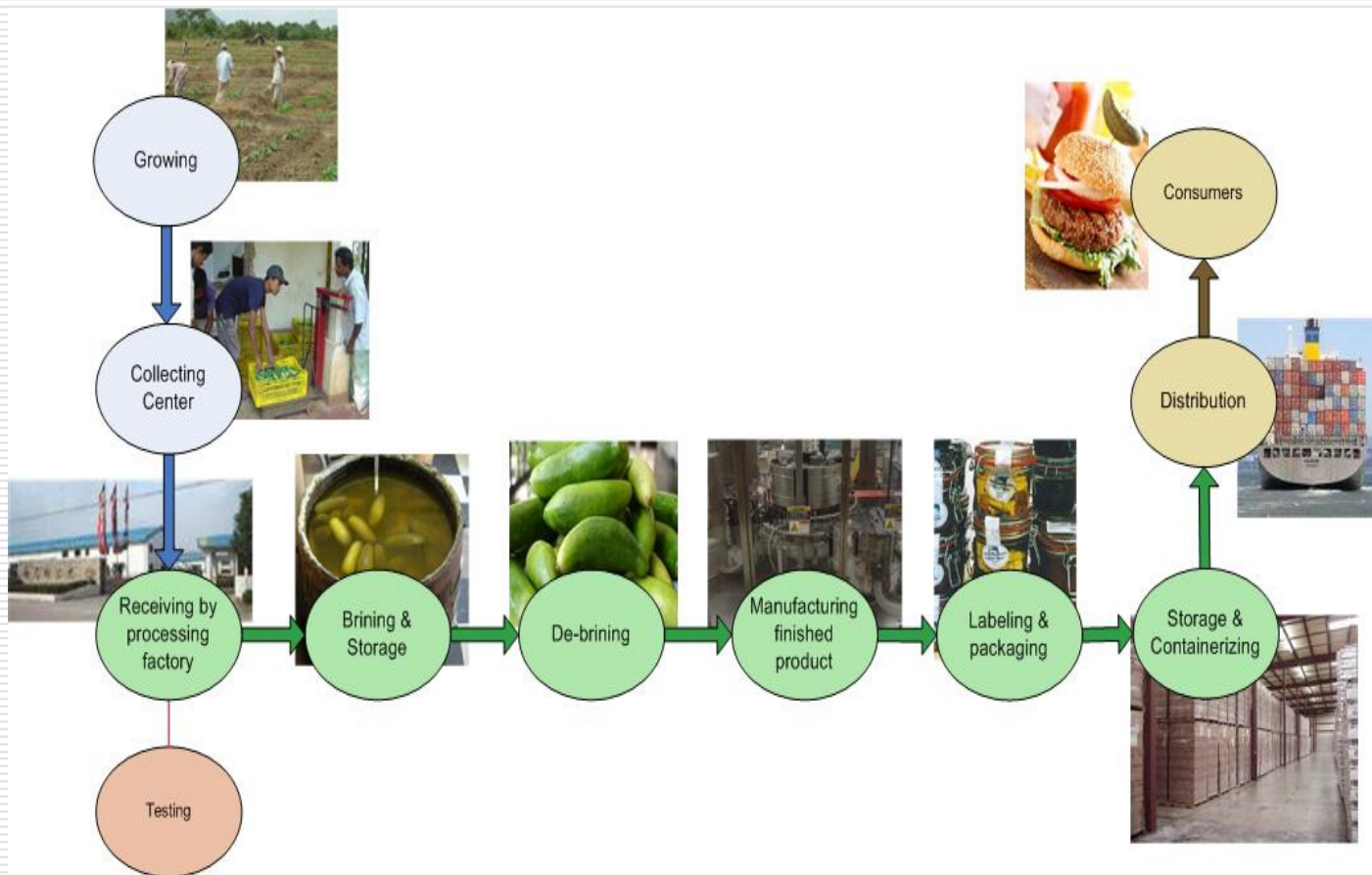
# Current status in Sri Lanka

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- Reactive
  - Meeting standards; not aggressively pursuing
    - No national standards
    - Some [derived] private standards; Ma's, HJS etc.
- Traditional
  - Paper-based; at most database
  - one-way flow
    - Farmer → Collector → Processor/Exporter →  
Importer → Retailer → Consumer



# Traceability at HJS



# Improving traceability with ICT

information and **communication** technology

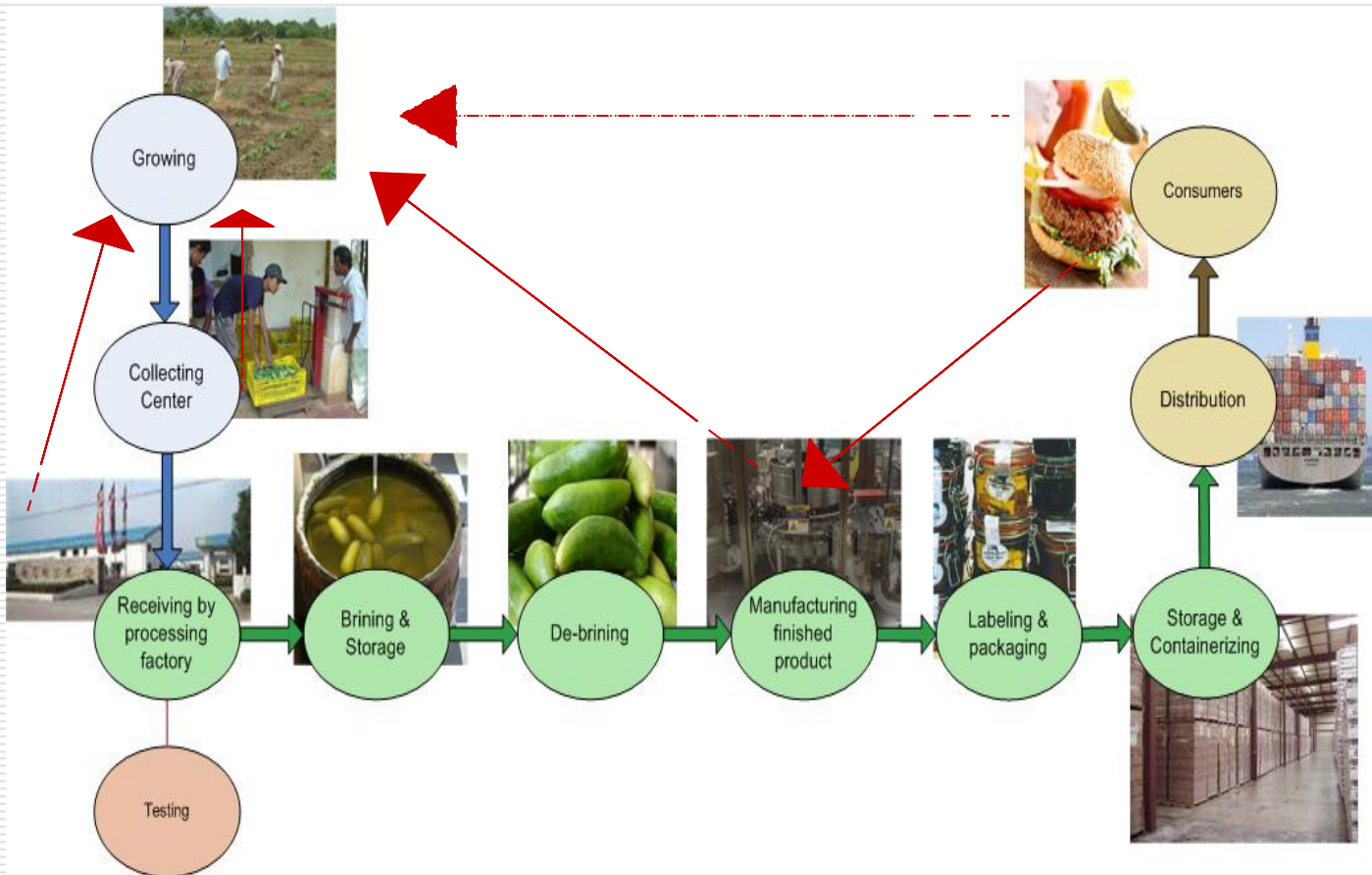
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- Multi-sector [agriculture, industry, services]
  - Growing
  - Harvesting
  - .....
  - Collecting and post-harvest handling
  - .....
  - Processing
  - Manufacturing
  - .....
  - Packing and storage
  - Export
  - .....
  - All other related commercial activities
    - Finance
    - Transport etc.



# Traceability with ICT

bi-directional information sharing system



# How farmer can benefit

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- Can build incentive structure: quality → traceability  
→ price incentive structure
  - Farmers provide up-stream data; but now farmers receive down-stream data
- Farmers are rewarded [+ or -] for quality differences
  - Quality information sent back to individual farmer for urgent action
- + or – based on rejects at processing plant
  - Lower rejects; higher per unit payment
  - Higher rejects; lower per unit payment



# How farmer can benefit 2

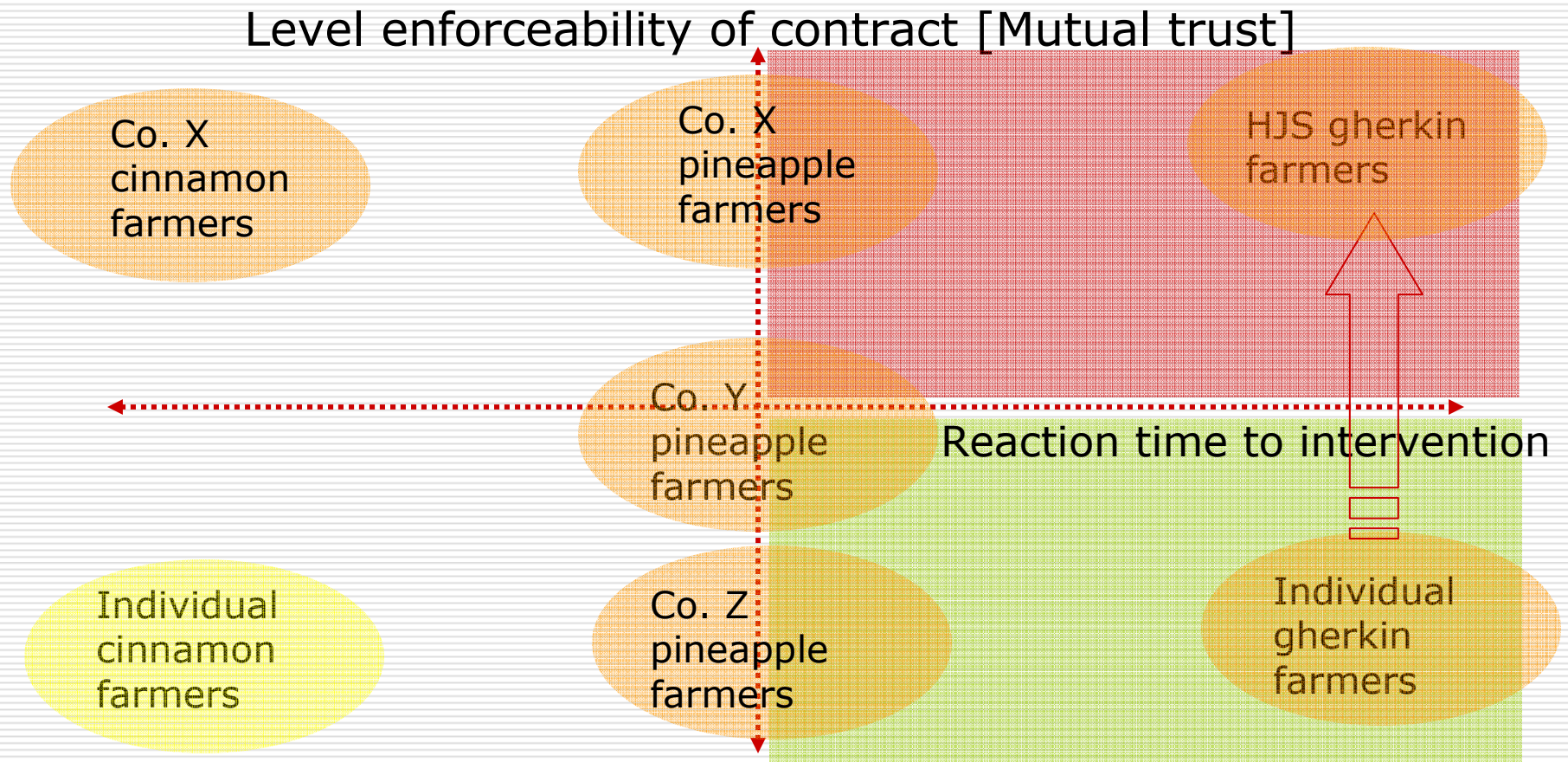
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- Can reduce cost of compliance by reducing wastage-premium
  - “Wastage premium”
    - In expectation of a certain amount of wastage, processor/exporter pays less than optimal price
    - If actual wastage falls and stabilizes at a lower level, then can increase payment
- Not possible for all produce
  - Based on **reaction time to intervention** and **mutual trust**





# Need to get into quadrant 1: ICT based traceability



# How farmer can benefit 3

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- Branding
  - Need High quality and traceable produce
  - Reputation
    - Superior quality, taste, design, packaging etc.
    - One 'food scandal' could spell doom for sector; discourage common marketing
  - Communication
    - Many grow organically, but cannot get the message out and the price premium [no traceability]



# How farmer can benefit 4

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- Special issues with markets that have monopsony buyers; particularly with out-grower schemes where all inputs are provided
  - Savings from “wastage premium” may or may not be passed to farmer. No direct incentive to share
  - But indirect incentive to protect credibility and to encourage more out-growers to link up
- Independent traceability service providers
  - Empower farmers [to meet monopsony buyer]
  - Provides opportunities for small holders outside out-grower schemes
- Competition



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