



# Maximizing Efficiency In The Production Of Coffee

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# Before We Begin.....

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## What Do We Mean By EFFICIENCY?

Accomplishing a job with minimum waste, expense, and unnecessary effort.

An efficient organization earns more money!!

## Is There A Relationship Between Efficiency And Quality?

In the production of coffee, Efficiency and Quality are meshed gears

Increasing efficiency requires control of process; and the data needed to become efficient are the same as those needed to manage quality!!

# Agenda

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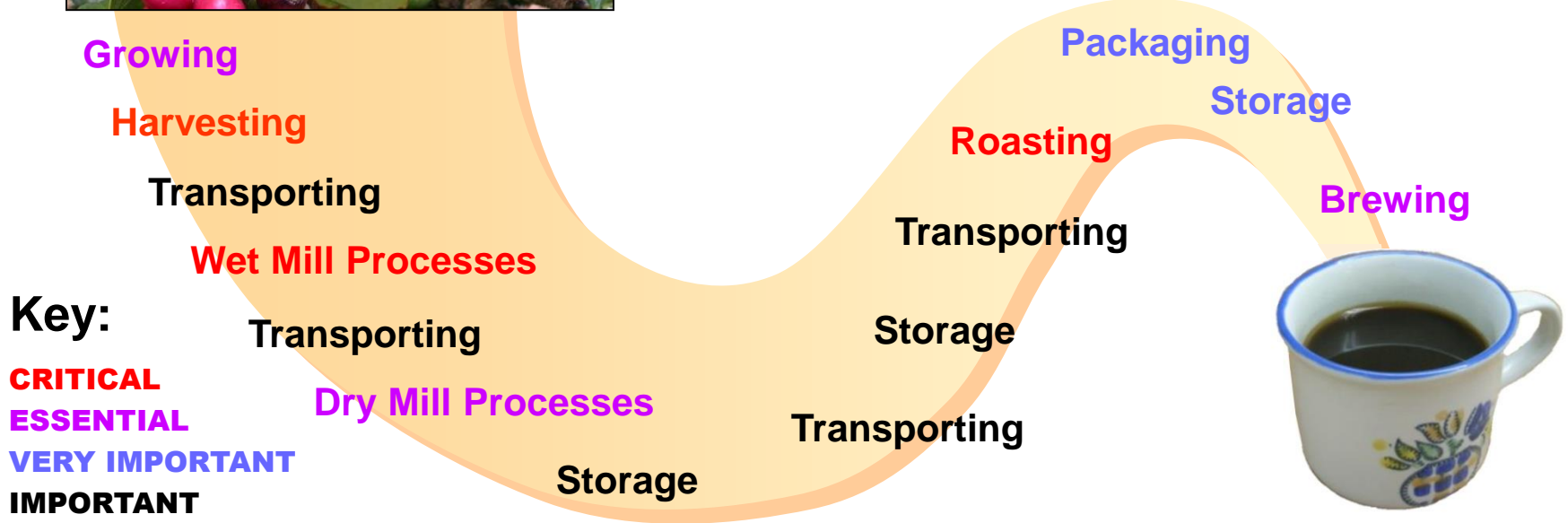
- Review Of The Steps To Produce Coffee
- Understanding That Coffee Is A Manufactured Product
- The Role Of Quality Management (a QMS) In Manufacturing; The FincaLab®
  - Increased efficiency
  - Increased quality
  - Fiscal accountability
  - Full traceability
- The Many Faces Of Efficiency
- Three Development Examples; Three Extremes!
  - Camaroon, AFRICA; Jaen, PERU; Nayarit, MEXICO
- Summary

**INCREASED  
INCOME**

# Contemplating The Critical Steps



After healthy and optimally fully ripe fruit is selectively picked, it is not possible to improve quality; the best we can do is to maintain quality through proper handling in all of the steps that occur between the harvest and the cup in your hand.



# The Role Of The Coffee Producer....

It All Begins With Healthy, Producing Coffee Plants....

There Are Three Basic Steps In Converting Coffee Cherries To Coffee Ready To Roast:

- 1) Harvesting
- 2) Conversion to dried product
- 3) Hulling, sorting, and bagging green coffee for shipping

Two Basic Steps Are  
**CRITICAL**



Growing

Harvesting

Transporting

Wet Mill Processes

Transporting

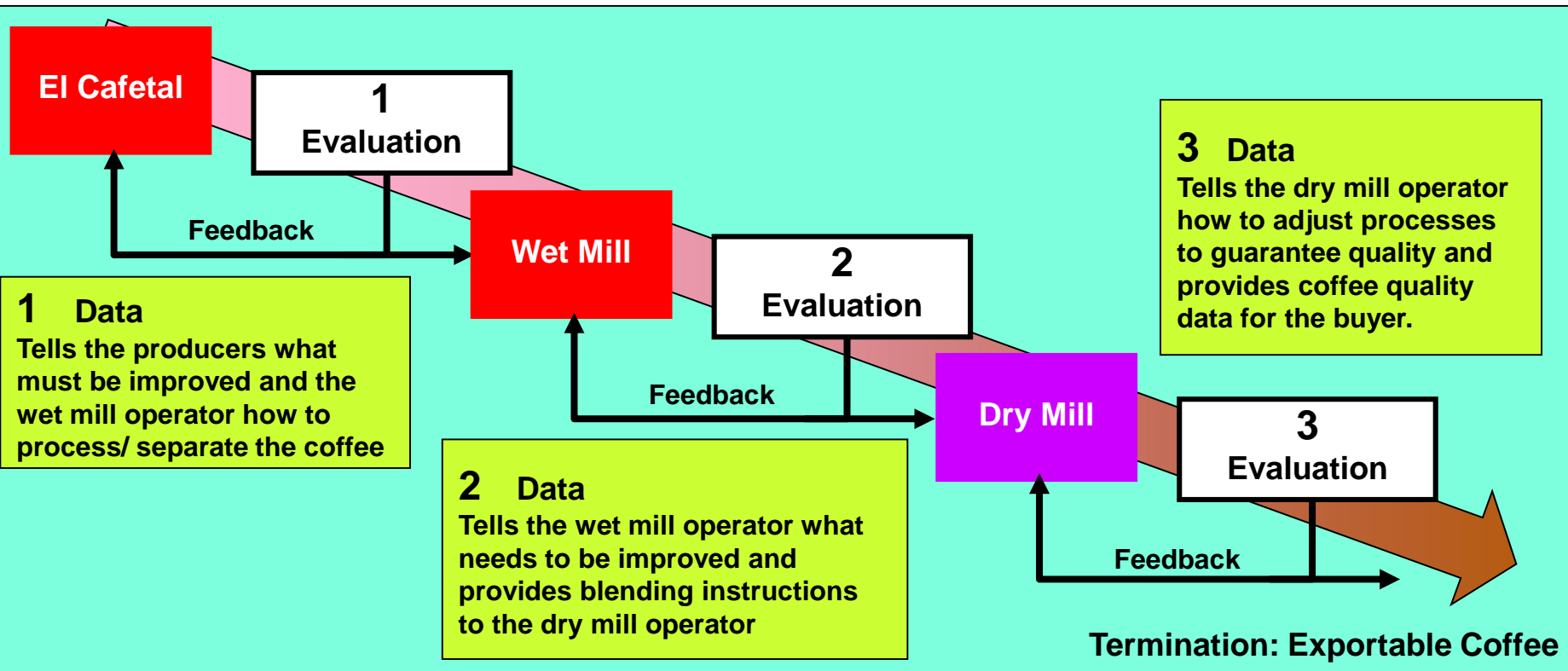
Dry Mill Processes

Storage

# How Are These Processes Managed?



- Each Of The Three Basic Steps Includes Evaluation, Feedback and Feed-forward
- These Processes Can Generate Large Volumes Of Data And Must Be Systematized To Be Managed Efficiently



# A Paradigm Change Is Needed....

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- **Coffee Production Is Manufacturing !!**

- WIKIPEDIA: Manufacturing is the production of merchandise ... using labor ...machines, [and] tools, [as well as] chemical and biological processing ..... The term may refer to a range of human activity .... in which raw materials are transformed into finished goods on a large scale.

- [And] .... manufacturing is a wealth-producing sector of an economy.... (WIKIPEDIA)

**Coffee Producers Need To Start Thinking Like Manufacturers !!**



# Manufacturers Think About:

- Producing the product
  - Increasing efficiency, reducing costs, fiscal control, product safety
- Marketing the product
  - Product differentiation: quality, certification, traceability
  - Customer satisfaction: product returns
- Improving the product
  - Process feedback

Modern Manufacturers Use A QMS, An MRP, Or A Combination Of Both To Achieve Their Objectives





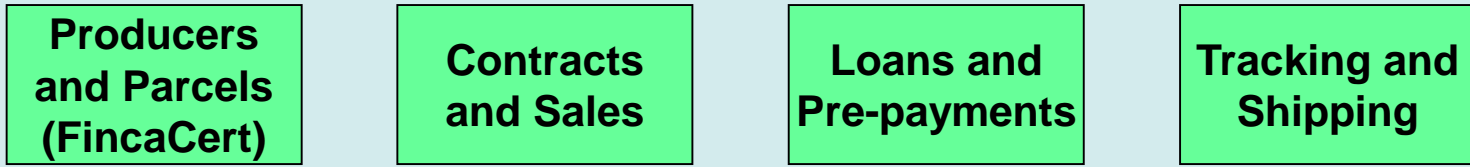
# A QMS-MRP Specifically For Coffee

- The FincaLab<sup>®</sup> helps the user manage all aspects of coffee production from agricultural activities to the sale of green coffee in bags with internet traceable barcodes and serial numbers
- The system uses two levels of controls:
  - **Supervisory Controls** for agricultural and fiscal management:  
These provide the base from which the user is able to manage all agricultural activities, production costs, certification, harvest loans, prepayments, contracts, and export logistics
  - **Process Controls** for process management:  
These are the basis for managing end-to-end quality and traceability from harvest of the fruit to sale/export, including distributed inventory with its associated logistics

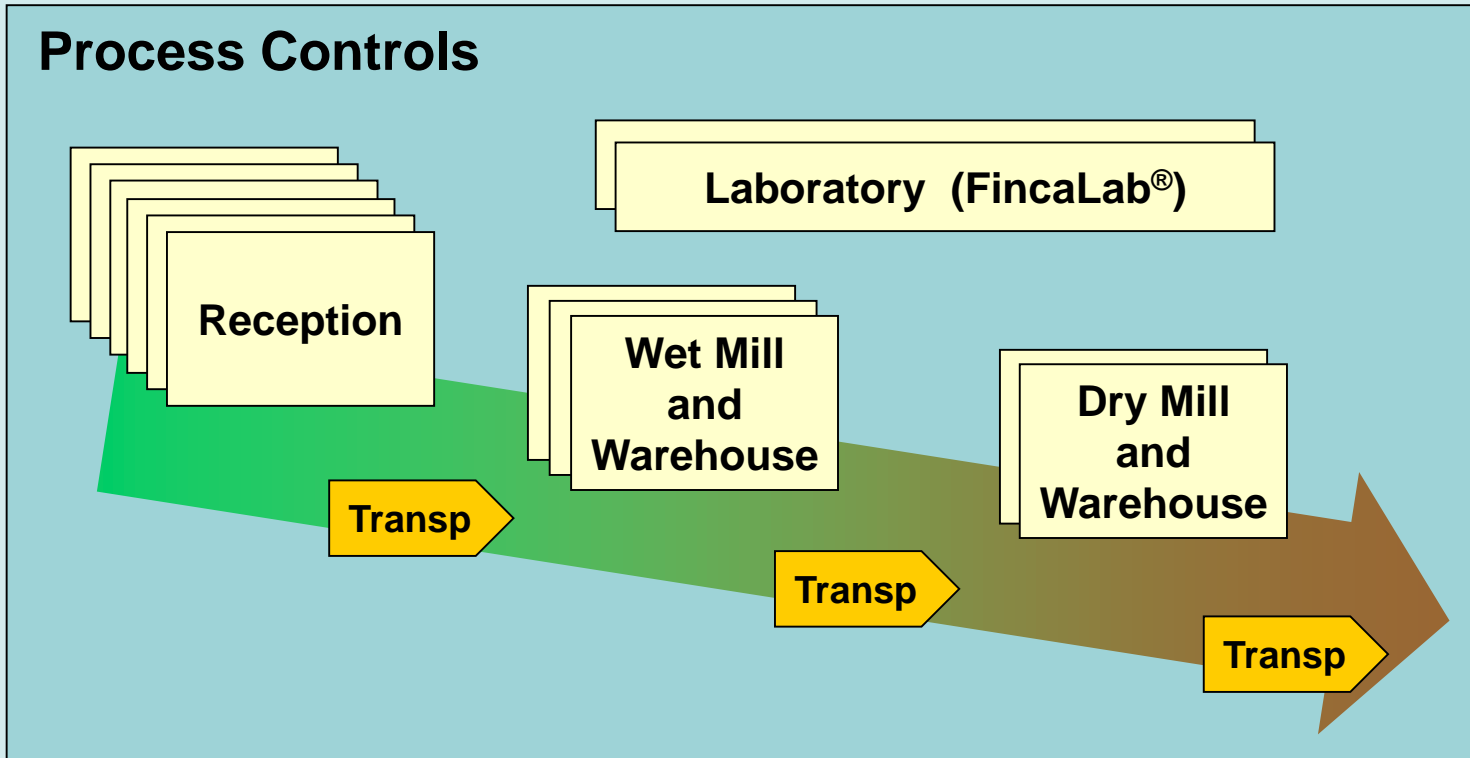
# FincaLab<sup>®</sup> Functional Modules



## Supervisory Controls



## Process Controls

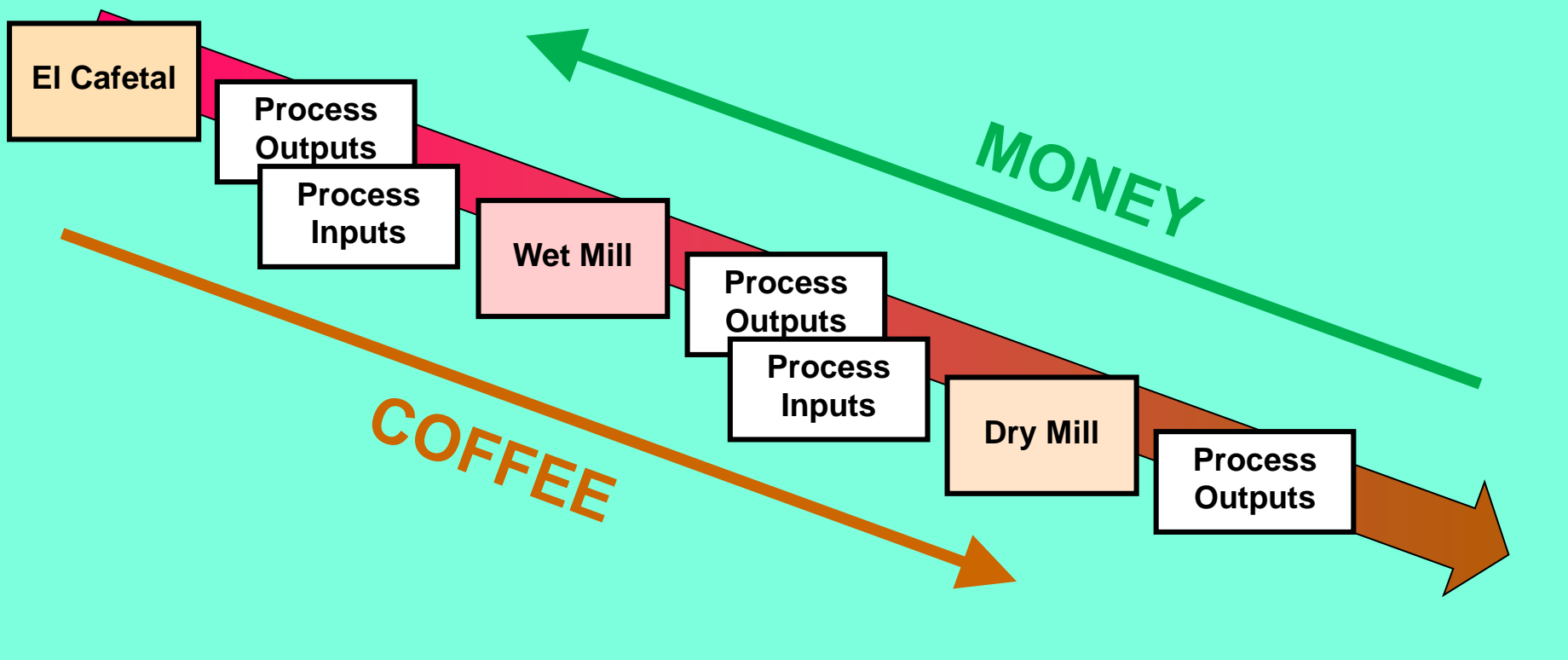


# Going With The Flow

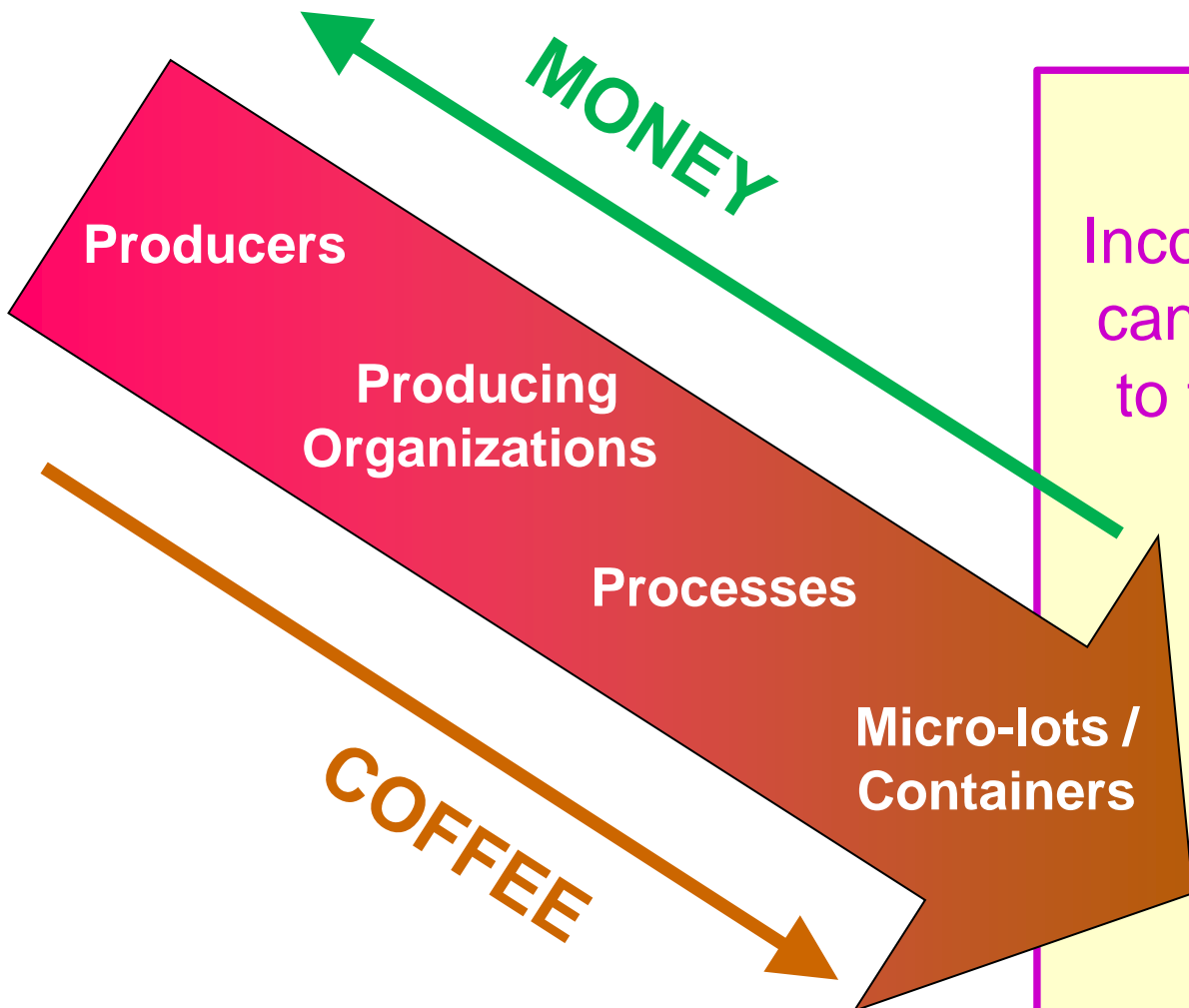


The FincaLab® QMS Documents All Process Inputs  
And All Process Outputs:

- 1) Individual processes can be optimized
- 2) There is **FULL TRANSPARENCY**:  
the flow of resources and the flow of coffee are both fully traceable



# First Accountability, Then Traceability....



## Result:

Income from each microlot can be correctly assigned to the producing Society

Sociedad	%
ASTAL	1.2
BASILIO	45.0
CUERNO	0.0
PROCAA	29.3
RIVIERA	5.0
TAMBOR	19.5

**100% Traceable Coffee**

# Truth In Labeling!! Internet Traceability!!



- Bar Code Labels Contain Tracking Information
- Bag Tags Also Show Quality Certification



# Consistent Quality, Traceable Coffee



## Coffee Farm To Consumer:



Cafetales and producers

Click TAG to trace this micro lot

**HA Bennett & Sons Pty Ltd**

Kew 3101, Australia  
Tel: (+61) 3-9853-0328  
www.hab.com.au  
Contract: MP-2234



**Terruño Nayarita™**

SHG Reserva  
Organico

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www.trackyourcoffee.com

Raw / Green Coffee

Consumers



Roasters



Wet Mills

Dry Mills



Exporters



Importers



End-to-end QA & logistics

# Assuring Efficiency

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## Two Examples:

### 1) Logistics And Geometry

- Moving the coffee through the system
- Layout of the farms
- Centralized wet mill

### 2) Managing Processes

- Flow of coffee through the three principal steps
- Separation of lots
- Cutting costs
- Minimizing work

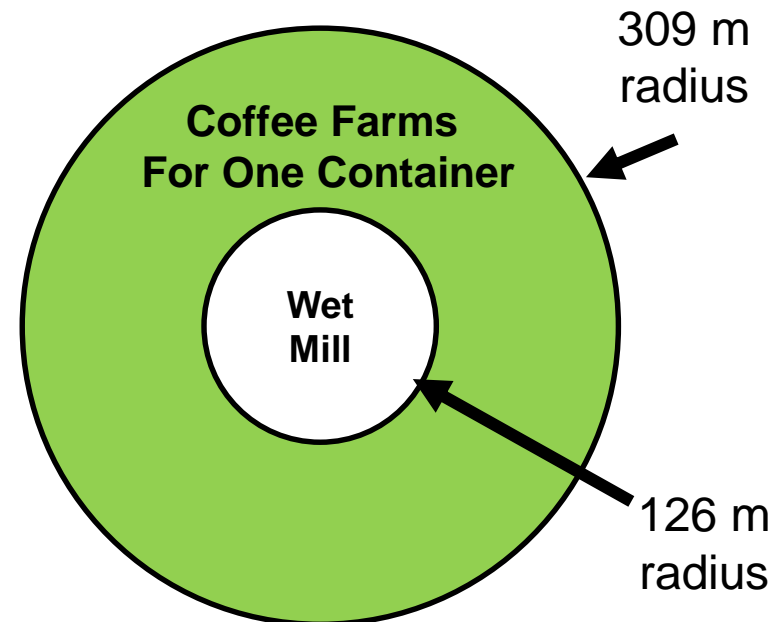
# 1) Efficiency In Logistics (Geometry)

## Maximum Efficiency; Centralized Wet Mill

- One Container Takes About 24 Ha Of Coffee Farms
  - About 120 tons of fruit; assume five tons per Ha (modest yield)
- Wet Mill, Patios And Road Require About 5 Ha
- Circular Layout Minimizes Transport Distance For Fruit
  - 309 m maximum radius for farms
  - 126 m maximum radius for wet mill
  - 183 m maximum transport distance for fruit

This Is The Most Efficient Possible Geometry

But What About Other Factors Such As The Work To Evaluate Quality?

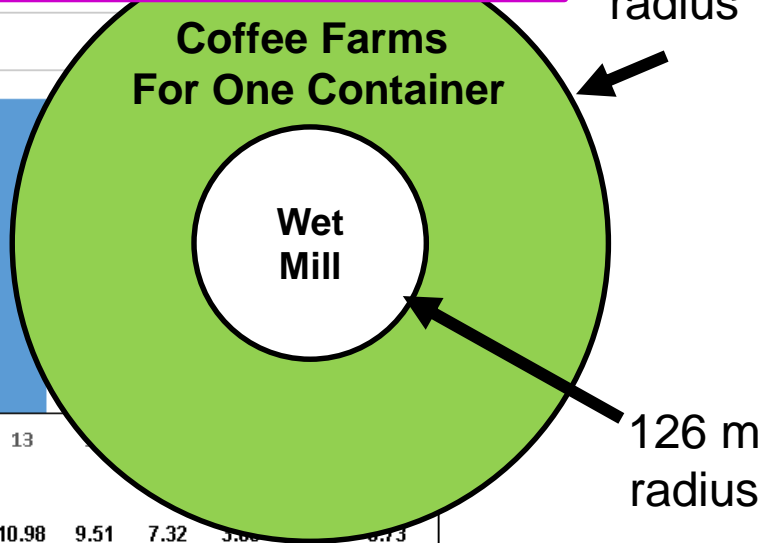
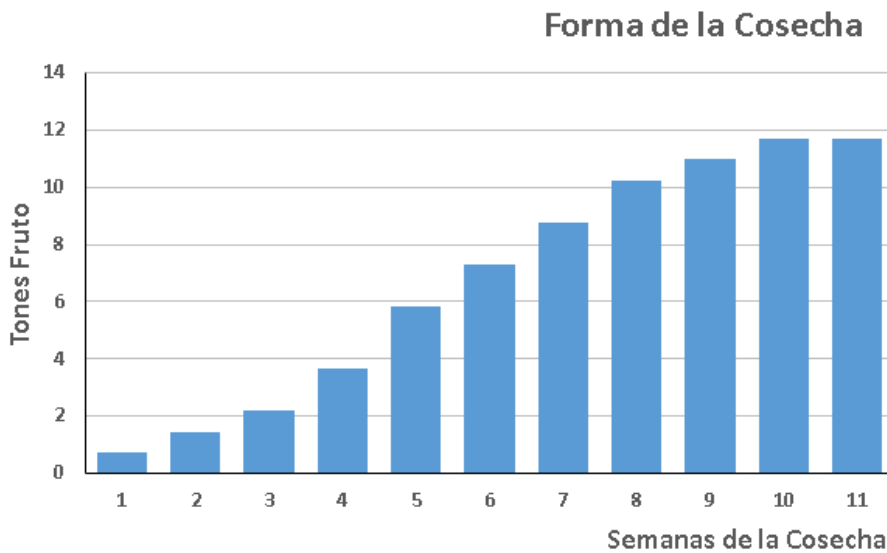




## 2) Efficiency In Process Management

- Harvest Season: 18 Weeks
- Ripe Fruit Picked: Once Per Week
- Result:
  - 18 Patio-lots of parchment, 3-55 bags each
  - 18 Lots to be cupped
  - 1-18 blends possible

This Has Maximum Quality Potential



Tones Fruto:	0.73	1.46	2.20	3.66	5.85	7.32	8.78	10.24	10.98	11.71	11.71	11.71	10.98	9.51	7.32	5.85	4.13	2.20	0.73
Sacos de 50 kg:	3.4	6.9	10.3	17.2	27.5	34.4	41.3	48.2	51.6	55.1	55.1	55.1	51.6	44.8	34.4	17.2	6.9	3.4	



# Producer Examples, Three Extremes

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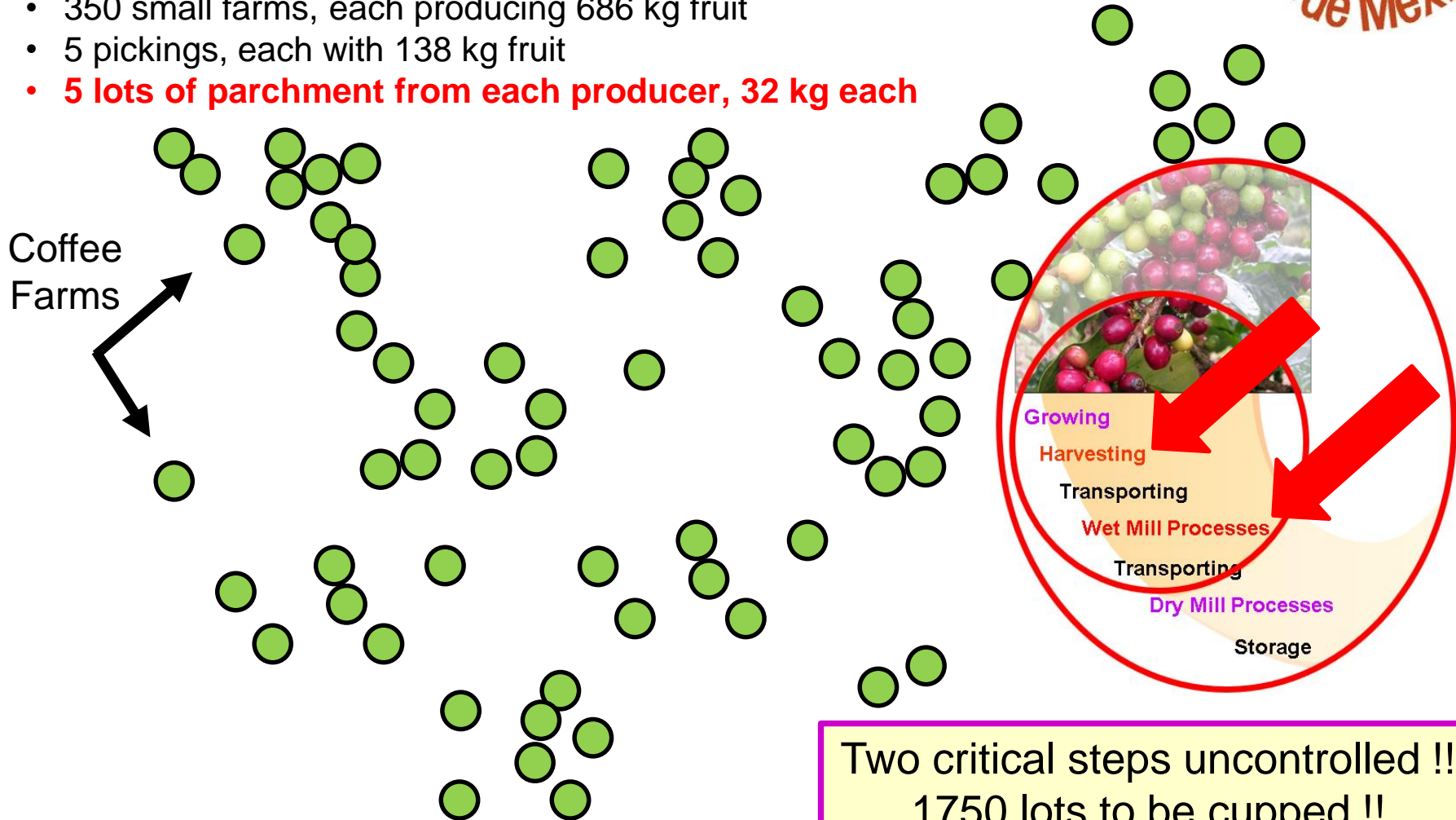
## Controls, Efficiency And Quality

- 1) Mocha Joes Organic Coffee Growers; Cameroon, Africa
  - 350 growers; 2 Containers
  - **100% purchased as parchment**
  - No centralized wet mill
  
- 2) Cooperativa CENFROCAFE; Jaén, Perú
  - 2550 growers; 500 Containers
  - **95% purchased as parchment**
  - One centralized wet mill
  
- 3) Grupo Terruño Nayarita; Nayarit, México
  - 300 growers; 12 Containers
  - **95% purchased as fruit**
  - Five centralized wet mills

# 1) Cameroon, Africa, Mocha Joe's

## 350 Small Famers With 0.14 Ha Each; No Centralized Wet Mill

- 350 small farms, each producing 686 kg fruit
- 5 pickings, each with 138 kg fruit
- **5 lots of parchment from each producer, 32 kg each**



## 2) Jaén, Perú, CENFROCAFE



- 2550 Members
- Seven Reception Centers
- 500 Containers Per Year
- **95% Bought From Members As Parchment**
- Patio Space And Sizing Screens Provided For Members To Prepare Parchment For Reception
- Very Well Developed Reception Procedures



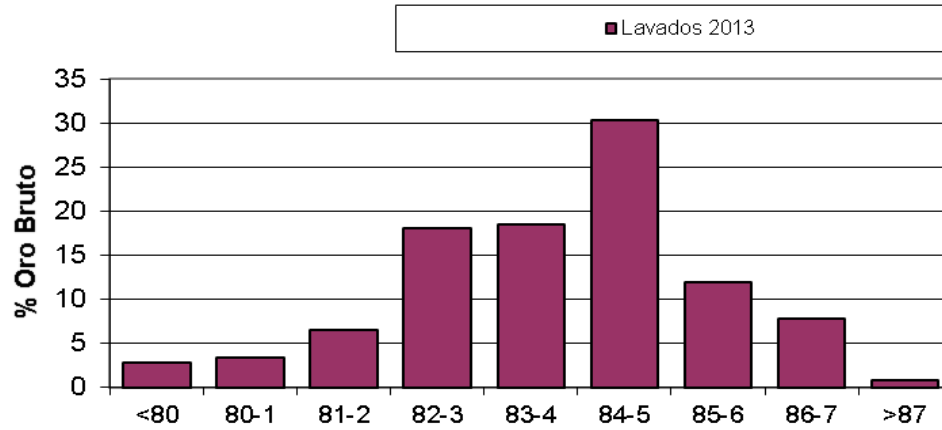
### Results:

- Some Coffee Above 85 points
- **30% BELOW 80 POINTS**

# 3) Nayarit, México, Grupo Terruño Nayarita



Histograma de la Taza



- 300 Members
- Five Reception Centers
- 12 Containers Per Year
- **95% Bought From Members As Fruit**
- Four Well Controlled Wet Mills
- One Well Controlled Patio For Naturals
- Very Well Developed Reception Procedures



## Results:

- 18% Above 85 points
- **3% BELOW 80 POINTS**

# The Examples Show.....



Growing

Harvesting

Transporting

Wet Mill Processes

Transporting

Dry Mill Processes

Storage

Centralized Wet Mills Are  
The Best Way To Assure  
Critical Process Efficiency

**Higher Efficiency,  
Improved Quality,  
Higher Income**



# FincaLab<sup>®</sup> Experience In Mexico

- The FincaLab<sup>®</sup> QMS-MRP is the result of 18 years working directly with Mexican producers in Nayarit
- The system has procedures and robust fiscal controls that help maximize production efficiency while assuring transparency and traceability
- Since 2006, Grupo Terruño Nayarita, has used the FincaLab<sup>®</sup> QMS to produce and export 136 containers of internet traceable coffee with barcodes and serial numbers on every bag

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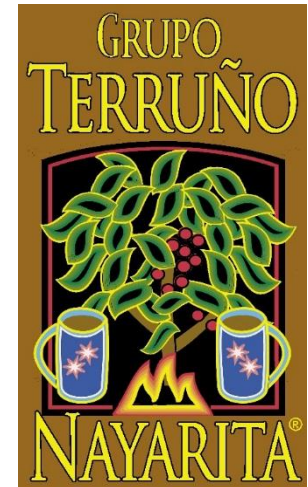
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www.trackyourcoffee.com

Click TAG to trace coffee



Click LOGO to learn more

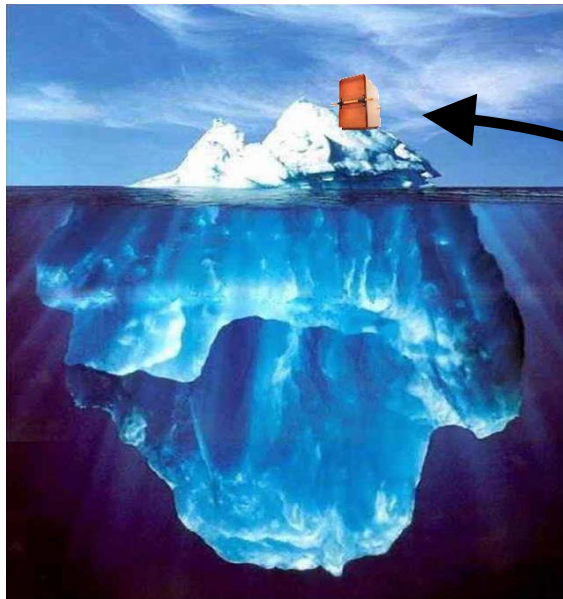
# Focus: Producer Centric Sustainability



The FincaLab<sup>®</sup> QMS-MRP Allows Producers To Monitor, Track, Trace And Communicate Business And Production Activities And Data Throughout Their Supply Chain

**A Manufacturing Point Of View  
Combined With A Modest Investment  
Can Reap Large Benefits**

This represents  
the total value of  
the FincaLab<sup>®</sup>  
QMS-MRP



Here is the  
FincaLab<sup>®</sup>  
portable  
laboratory



[Click laboratory to see components](#)





# Summary

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- Coffee Producers Need To Start Thinking Like The Manufacturers They Are!
- Efficiency Is Born Of Process Management
- Process Controls Promote:
  - Minimization of work, expenses and losses
  - Improvements in quality, productivity and income
  - Accountability
  - Transparency
  - Traceability
- The Use Of A QMS-MRP Such As The FincaLab<sup>®</sup> Is Essential In Coffee Production